



SCHOOL of
GRADUATE STUDIES

EAST TENNESSEE STATE UNIVERSITY

East Tennessee State University
**Digital Commons @ East
Tennessee State University**

Electronic Theses and Dissertations

Student Works

August 1998

A Study on Attitudes of Rural and Urban Respiratory Care Practitioners Toward the Impact of Continuing Education

Donald A. Samples

East Tennessee State University

Follow this and additional works at: <https://dc.etsu.edu/etd>



Part of the [Adult and Continuing Education Administration Commons](#), and the [Health and Physical Education Commons](#)

Recommended Citation

Samples, Donald A., "A Study on Attitudes of Rural and Urban Respiratory Care Practitioners Toward the Impact of Continuing Education" (1998). *Electronic Theses and Dissertations*. Paper 2972. <https://dc.etsu.edu/etd/2972>

This Dissertation - Open Access is brought to you for free and open access by the Student Works at Digital Commons @ East Tennessee State University. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons @ East Tennessee State University. For more information, please contact digilib@etsu.edu.

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

A STUDY ON
ATTITUDES OF RURAL AND URBAN
RESPIRATORY CARE PRACTITIONERS TOWARD THE
IMPACT OF CONTINUING EDUCATION

A Dissertation
Presented to
the Faculty of the
Department of Education Leadership and Policy Analysis
East Tennessee State University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Donald A. Samples

May 1998

UMI Number: 9835696

UMI Microform 9835696
Copyright 1998, by UMI Company. All rights reserved.

**This microform edition is protected against unauthorized
copying under Title 17, United States Code.**

UMI
300 North Zeeb Road
Ann Arbor, MI 48103

APPROVAL

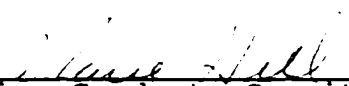
This is to certify that the Graduate Committee of

DONALD A. SAMPLES


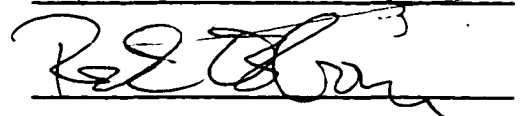
met on the

Twenty-sixth day of March, 1998.

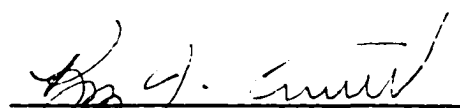
The committee read and examined his dissertation, supervised his defense of it in an oral examination, and decided to recommend that his study be submitted to the Graduate Council, in partial fulfillment of the requirements for the degree of Doctorate in Education.


Chair, Graduate Committee


Bonnie Mays



R. L. Lonsberry

Signed on behalf of
the Graduate Council


Interim Dean, School of
Graduate Studies

ABSTRACT

A STUDY ON ATTITUDES OF RURAL AND URBAN RESPIRATORY CARE PRACTITIONERS TOWARD THE IMPACT OF CONTINUING EDUCATION

by

Donald A. Samples

The purpose of this study was to examine the preferences, impact, and attitude of respiratory care practitioners toward continuing education. A review of demographic characteristics was conducted to develop a professional profile of practitioners in Tennessee. An assessment of continuing education practices provided information concerning types of courses, preferences, and methods used to meet continuing education requirements.

Data collection was made possible through the use of a questionnaire. A stratified random sample was drawn from the 1,966 respiratory care practitioners in Tennessee. Based on the practitioner's residence, 150 practitioners were selected from rural and urban communities. A total of 300 self-administered questionnaires were mailed to practitioners to comprise the sample. Data collection was conducted over a 4 week period with a second mailing occurring after the first 2 weeks. A total of 120 surveys were returned for a response rate of 40%.

The findings in this study demonstrated that rural and urban respiratory care practitioners in Tennessee have similar preferences toward continuing education. Respiratory care practitioners felt mandatory continuing education was beneficial and should be retained in Tennessee. This study indicated no differences in the impact of mandatory continuing education on the attitude of rural and urban practitioners. Both groups reported that mandatory continuing education had impacted the attitude of respiratory care practitioners in a positive manner. The study produced findings that revealed differences between rural and urban practitioners most preferred and used methods of continuing education. Urban practitioners indicated an increase involvement of physicians as a method most preferred and used for continuing education when compared to rural respondents. Comparison of rural and urban respondents found both groups preferences for course

content were the same. The need for continuing education in various content areas transcends geographical boundaries. The typical respiratory care practitioner tended to be a female between the ages of 26-45, while working as a full-time practitioner in an acute care hospital. However, differences were identified between the two populations when comparing professional characteristics. Most rural practitioners were credentialed as certified respiratory care technicians with urban practitioners identified themselves as registered respiratory therapist.

INSTITUTIONAL REVIEW BOARD APPROVAL

This is to certify that the following study had been filed and approved by the Institutional Review Board of East Tennessee State University.

Title of Project: A Study on Attitudes of Rural and Urban Respiratory Care Practitioners Toward the Impact of Continuing Education.

Principal Investigator: Donald A. Samples

Department: Educational Leadership and Policy Analysis

Date Submitted: November 13, 1997

Institutional Review Board, Chair

DEDICATION

This study is dedicated to my family. Foremost, I am particularly grateful to my wife, Tammy, whose support, sacrifice, and understanding was crucial to my success during my doctoral studies. I would like to express a special thanks to my children, Tara and Taylor, who shared their father during times that can never be replaced. Lastly, my deepest gratitude and respect goes to Eugene and Charlene Howell for their unwavering support over the years.

ACKNOWLEDGMENTS

I would like to offer a special thanks to Dr. Marie Hill, who graciously agreed to serve as my mentor, committee chair, and friend during this formidable task. Her guidance and encouragement will not soon be forgotten. Also, a deep appreciation is extended to Dr. Gunapala Edirisooriya, Dr. Rick Osborn, and Dr. Bonnie Marrs, committee members, for their dedication and assistance provided during the development of this study.

CONTENTS

	Page
APPROVAL	ii
ABSTRACT	iii
INSTITUTIONAL REVIEW BOARD	v
DEDICATION	vi
ACKNOWLEDGEMENTS	vii
Chapter	
1. INTRODUCTION	1
Statement of the Problem	2
Purpose of the Study	3
Research Questions	4
Significance of the Problem	5
Limitations	6
Definitions	7
Assumptions	8
Overview of the Study	8
2. REVIEW OF LITERATURE	10
Introduction	10
Theoretical Framework	11
Adult Education	18
Professional Continuing Education	27
Attitudes Toward Continuing Education	32
Impact of Mandatory Continuing Education ...	35

Chapter	Page
Issues in Rural and Urban Continuing Education	36
Summary	43
3. METHODOLOGY	53
Research Design	53
Population	53
Sample	54
Instrumentation	54
Data Collection	57
Data Analysis	58
4. DATA ANALYSIS	60
Introduction	60
Analysis of Data for Research Question #1 ..	61
Analysis of Data for Research Question #2 ..	68
Analysis of Data for Research Question #3 ..	74
Analysis of Data for Research Question #4 ..	78
Analysis of Data for Research Question #5 ..	81
Gender and Age	83
Work Place	83
Professional Characteristics	86
Distance Traveled and Facility Size	91
Analysis of data for research question #6 ..	98
5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS	100
Summary	100
Conclusions	101
Recommendations	110
REFERENCES	112

	Page
APPENDICES	122
APPENDIX A: Self Administered Questionnaire	123
APPENDIX B: Cover Letter for Questionnaire	129
APPENDIX C: State Professional Association Letter of Support	131
VITA	133

LIST OF TABLES

Table	Page
1. SUMMARY OF LITERATURE REVIEW	46
2. EDUCATION DURING CE RENEWAL PERIOD	62
3. BIENNIAL HOURS OF CONTINUING EDUCATION	63
4. HOURS OF VOLUNTARY CONTINUING EDUCATION	64
5. t-TEST ANALYSIS FOR RESEARCH QUESTION # 1	66
6. ANALYSIS OF IMPACT AND ATTITUDE RESPONSES	70
7. ANALYSIS OF IMPACT AND ATTITUDES TOWARD CE	73
8. PREFERRED METHODS OF CONTINUING EDUCATION	76
9. METHODS OF CONTINUING EDUCATION USED.....	78
10. PREFERENCES IN CONTINUING EDUCATION TOPICS	82
11. COMPARISON OF GENDER AND AGE DEMOGRAPHICS	84
12. COMPARISON OF WORK PLACE DEMOGRAPHICS	86
13. COMPARISON OF PROFESSIONAL CHARACTERISTICS	92
14. COMPARISON OF TRAVEL AND FACILITY CHARACTERISTICS.	96

CHAPTER 1

INTRODUCTION

Rapid advancement in health care makes current knowledge obsolete in a short period of time. Changes in the knowledge base have precipitated the growth of continuing education as an effort to maintain professional competence. A growing number of health care professionals view continuing education as the most viable method to maintain and improve performance by updating knowledge and skills (Houle, 1980). Most health care providers acknowledge that continuing education is beneficial to their growth and professional development.

However, debate continues over whether continuing education should be mandatory or voluntary. Numerous health care professions mandate continuing education as a method to keep abreast of changes in their professional areas. Nursing research has noted the effects of continuing education requirements and its impact on practitioner attitudes (Arneson, 1985; Hungler, 1985; Hutton, 1987; Pituch, 1979; Scheller, 1993). Current research is lacking that examines the impact of continuing education on rural health care providers in comparison to urban providers. The Office of Technological Assessment [OTA] (1990) found

demographic differences between rural and urban nursing professionals. Yet, studies have not examined these differences and their impact on continuing education activities.

Nursing research on continuing education offers only minimal insights for allied health professions. Several studies have found a negative impact on the attitude of nurses toward continuing education (Arneson, 1985; Hungler, 1985; Hutton 1987; Pituch, 1979). These negative attitudes were associated with lower professional educational levels, location of continuing education programs, age, and cost. Due to the educational structure of allied health programs, such as respiratory care, allied health graduates enter their profession with less professional training than graduates of nursing programs.

Furthermore, location of the programs appear to evoke negative attitudes. Many respiratory care practitioners choose to work in rural communities. The lower educational levels of respiratory care practitioners and the location of their practice leave unanswered questions about the impact of continuing education on their attitudes.

Statement of the Problem

Respiratory care practitioners are allied health care providers specializing in the therapeutic and diagnostic care of patients with pulmonary dysfunction. Currently, 42 states require biennial renewal of the practitioners'

professional license. Twenty-seven of these states stipulate that mandatory continuing education (MCE) is required to practice respiratory care and to maintain a current license. Although the other 15 states require biennial license renewal, they have not designated specific hours of continuing education sessions to ensure continued competence (Update State Licensure, 1996). Regulatory boards of each state continually update and amend the general rules governing the practice of respiratory care. Decisions to mandate or eliminate continuing education for practitioners are based on the perceived benefit of mandatory continuing education or personal preference of the board. The governing board for state councils of respiratory care is generally comprised of several respiratory care practitioners, a physician, and a community member. Many times decisions about continuing education are left to the preference of the board. A review of research on mandatory continuing education offers few studies in the field of allied health. Empirical research is needed to form a useful foundation to assist governing boards concerning decisions about continuing education requirements.

Purpose of the Study

The purpose of this study is to analyze the impact of mandatory continuing education on the attitudes of rural and urban respiratory care practitioners in Tennessee.

Demographic comparisons will be examined with regard to practitioners' age, gender, education level, years of professional practice, current job level, and professional credentials. Research will also be conducted to determine preferences toward program content and methodology. Data compilation will allow continuing education programs to be tailored to practitioners' needs. State governing boards will have the opportunity to base decisions regarding mandatory continuing education on empirical research that examines perceptions of practitioners.

Research Questions

1. What preferences do respiratory care practitioners have regarding continuing education?
2. Do rural and urban respiratory care practitioners differ in their attitudes toward the impact of mandatory continuing education?
3. Are there differences in the preferred and actual methods of continuing education instruction received by rural and urban respiratory care practitioners?
4. Are there differences in preferences of course content between rural and urban respiratory care practitioners?
5. Are there demographic differences among respiratory care practitioners in rural and urban communities?
6. Is there a difference between rural and urban employer financial assistance with continuing education courses?

Significance of the Problem

Research on the impact of continuing education on the attitude of allied health professions is limited. Most research in health care pertains to physicians and nurses. Limited research could be related to the fact that most allied health professions are relatively young in comparison to the long histories of physicians and nurses. Furthermore, educational backgrounds of physicians and nurses promote scholarly research. Nursing professional education has advanced to provide baccalaureate, masters, and doctoral programs. This advanced educational preparation has enabled graduates to produce a significant volume of research.

Allied health education is playing "catch-up" to these professions. Currently most allied health education programs offer one-year certificate or two-year associate degree programs. Although baccalaureate programs exist for some allied health professions, they are few in number. The educational structure of respiratory care consists of a one-year certificate and two-year associate degree programs. Less than 40 baccalaureate programs exist nationwide.

Because of the differences in educational backgrounds, continuing education research in nursing transfers weakly when generalizing results to allied health professionals. Nursing research (Arneson, 1985; Hungler, 1985; Hutton, 1987; Pituch, 1979) has shown that nurses with lower

educational backgrounds such as diploma or associate degrees display different attitudes toward continuing education when compared to baccalaureate prepared or higher degree nurses. Allied health professions, such as respiratory care, lack empirical research to determine preferences of continuing education practices.

Furthermore, current research is deficient in comparing rural and urban settings. Research conducted on the impact of continuing education in rural and urban respiratory care practitioners would contribute to the empirical research in other allied health professions.

Limitations

Several limitations of this study can be identified. Various parameters are used to define rural and urban settings. Modifications of existing definitions will be used to meet the needs of this study. The study was limited to respiratory care practitioners who are currently licensed by the state of Tennessee. Therefore, generalizations cannot be made to respiratory care practitioners in other states. Furthermore, attitude scales carry the risk of subjects providing expected reactions rather than their actual responses. Likewise, the process of measuring attitudes has the risk of creating an attitude where none previously existed.

Definitions

Continuing Professional Education: The formal and informal means of acquiring understanding and maintaining competence by an active professional (Houle, 1980).

Mandatory Continuing Education: A statutory requirement that designates that practitioners must participate in a certain minimum amount of health related continuing education before their license to practice can be renewed (Pituch, 1979).

Respiratory Care Practitioner: Any person holding a license or certificate in good standing as either a respiratory care therapist, respiratory care technician or respiratory care assistant (Tennessee Board of Medical Examiners, 1995).

Rural setting: For the purpose of this study, a nonmetropolitan rural county is an area that has a population of less than 50,000.

Urban setting: For the purpose of this study, a metropolitan urban county is an area that has a population greater than 50,000.

Allied Health Professionals: A large cluster of health care related personnel whose functions includes assisting, facilitating, or complementing the work of physicians (American Medical Association, [AMA] 1990).

Assumptions

1. All respiratory care practitioners have learning needs.
2. All respiratory care practitioners will take action to meet learning needs.
3. Participants in this study will provide honest objective responses.

Overview of the Study

This study will be organized and presented in five chapters. Chapter 1 will provide an introduction into the purpose of the study. The chapter will address a statement of the problem, research questions, significance of the problem, limitations, and definitions. The conclusion of the chapter will include an overview of the entire study.

Chapter 2 provides the foundation for the basis of this study. The review of literature includes: 1) theoretical framework for adult learning, 2) adult education, 3) professional continuing education, 4) attitudes toward mandatory continuing education, 5) impact of continuing education, and 6) continuing education issues in rural communities.

Chapter 3 consists of the study methodology. The chapter describes the steps to be taken in conducting this research. Details are provided to describe the technique used for the selection of the sample, instrument design, data collection, and statistical data analysis.

Chapter 4 involves a data analysis of the study. The chapter presents the results of the data collected from the survey instrument. Statistical procedures will include descriptive and inferential analysis. Tables will graphically display the results of the data collection. Analysis of data will provide the necessary information to formulate responses to the research questions.

Chapter 5 includes the summary, conclusions, and recommendations of the study. A summary will be conducted to review the procedures used in identifying the sample population, methodology, composition of questionnaire, and data analysis. Results of the data analysis will allow conclusions to be drawn from the study. An interpretation of the findings and their implications will be provided. Finally, the study will conclude with recommendation for future research.

In the next chapter, a review of the literature will provide a comprehensive analysis of the findings related to continuing education. The review will indicate a need for the research to be conducted in this study.

CHAPTER 2

REVIEW OF LITERATURE

This chapter provides a review of the literature relevant to the investigation of this study. The theoretical and empirical literature on adult continuing education is voluminous. For the purpose of this study, six major areas have been identified for review. The intent is to provide a thorough understanding of continuing education and to show how it relates to this study. Accordingly, the review of literature consists of 1) theoretical framework for adult learning, 2) adult education, 3) professional continuing education, 4) attitudes toward mandatory continuing education, 5) impact of continuing education, and 6) continuing education issues in rural and urban communities.

Introduction

The concept of continuing education is not new. However, in the 1960s, the term "continuing professional education" gained popularity to encourage professionals to engage in lifelong learning. Houle (1980) states, "A pivotal need is for every professional to be able to carry out his or her duties according to the highest possible standards of character and competence"(p. 7). Continuing education is thought to be the mechanism that enables

professionals to pursue lifelong learning skills. The explosive growth in technological advances has accelerated the need for continuing education. Apps (1988) states that information available to professionals doubles every seven years. Approximately half of the cognitive knowledge obtained during a professional formal training will be outdated in less than five years (Apps). Continuing education has become a method of allowing professionals to keep pace in an ever changing society.

Theoretical Framework

To comprehend the concept of continuing education, an introduction into basic theories associated with adult learning is necessary. Many writings address the process of adult learning and continuing education. Several major influences in adult learning theories and their contribution to the current knowledge base will be discussed.

Freire (1970) is a Brazilian whose work is well known in Latin-America. His humanistic approach to continued learning deals with the process of reflection that allows the individual to become more cognizant of realities other than that to which they have been socialized. Freire describes learning as the process of knowing only what the culture allows. According to Freire, adults should be allowed to reflect on their personal experiences and to apply them to their environment. Likewise, emphasis should be placed on the interaction between the teacher and

learner. Educators should also act as facilitators who provide experiences that allow learners to reflect on applications in their "socio-cultural" settings. Finally, Freire indicates that education should permit adults to take active roles in the creation of their learning.

Gagne' (1985) contributed to the knowledge base of adult continuing education through introduction of eight hierarchical types of learning. These include signal learning, stimulus-response learning, motor and verbal chaining, multiple discrimination, concept learning, rule learning, and problem solving which can occur at any level.

Signal learning, a form of classical conditioning occurs in both children and adults. Gagne' (1985) notes that everyone obtains signal learning to develop attitudes and prejudices. Stimulus-response learning is related to the amount of reward. The more reward the learner receives the more they learn. Motor and verbal chaining refers to rote learning. The process of practice and re-enforcement establishes proper levels of learning. Multiple discrimination learning allows the learner to analyze different materials and to choose correct items for specific situations. Conceptual learning occurring in adolescence is significant due to the initial abstract thinking abilities. Rule learning, which builds on the process of conceptual learning with adults, involves responding to signals from various sources to select the appropriate action. The final

and highest level of hierarchical learning is problem solving. Gagne' postulates that conceptual, rule, and problem solving learning are methods utilized in adult learning. Problem solving exercises provide the foundation for instruction of adults. Numerous problem solving models have been developed based on Gagne's eighth level of learning.

According to Mezirow (1990), an authority on adult learning cycles, the result of various life crises motivate adults to return to the classroom. Prior knowledge is no longer considered sufficient to meet the learner's needs. Mezirow's learning cycle includes the following ten steps:

1. a disorientating dilemma
2. self-examination
3. critical assessment and a sense of alienation
4. relating discontent to the experiences of others
5. exploring options for new ways of acting
6. building confidence in new ways of behaving
7. planning a course of action
8. acquiring knowledge in order to implement plans
9. experimenting with new roles
10. re-integration into society.

Mezirow (1990) and Freire (1970) share the philosophy that education can liberate adult learners into new environments. Furthermore, Mezirow and Freire stress the

importance of reflection in the adult learning experience. Mezirow notes three levels of reflection occurring in adulthood. There are as follows:

1. conceptual reflectivity: assessing the extent to which the concepts employed are adequate for the judgement;
2. psychic reflectivity: recognition of the habit of making percipient judgements on the basis of limited information;
3. theoretical reflectivity: awareness of why one set of perspectives is more or less adequate to explain personal experience.

Rogers (1983) contributed to adult learning theories in the area of experiential learning. Rogers, like Knowles, postulated that education served as a vehicle to promote a self-actualized learner. He indicated that experiential learning had a quality of personal commitment, self directed learning, and teacher facilitation. The following principles are involved in experiential learning:

1. individuals have the capability to learn;
2. learning is enhanced when course is relevant to learner's needs;
3. learning consist of changes in an individuals self-perception and self-organization;
4. learning is bolstered in a non-threatening environment;

5. external threats to learning should be minimized when introducing change;
6. hands on experience promotes learning;
7. learner involvement in the learning process improves outcomes;
8. self-initiated learning involves the whole person;
9. self-direction and originality are enhanced with basic self evaluation of needs;
10. readiness for change and lifelong learning.

Two learning theories that are relevant to the practice of adult education are behaviorism and humanism. The behaviorist theory of learning was founded by John B. Watson. However, modern behaviorism is best described in the works of B. F. Skinner. Both of these researchers concluded that learning was controlled by the environment (Grippen & Peter, 1984). This theory has been influential in the development of competency-based adult education. It has experienced wide application in the armed forces, nursing, allied health, and business and industry (Merriam & Cunningham, 1989). Skinner's principle of operant conditioning stated that people reinforce what they want others to do and ignore what they want them to stop doing (Grippen & Peter, 1984). The principle of reinforcement is essential to the behaviorist theory. Another theorist known for his work in behaviorism was Edward Thorndike. His contribution to behaviorism was the concept of stimulus and

response. According to Thorndike, through repeated stimulus and response, certain behavior could be strengthened or weakened (Merriam & Caffarella, 1991).

The concept of behavioral objectives was a direct outgrowth of behavioral beliefs. Behavioral objectives provide educators a method of clarifying what is to be taught and learned. Behaviorism is the foundation of the largest segment of adult learning, job and skills training. Cross (1981) notes that learning materials in behaviorism are designed to relate to a desired end behavior, to state specific and measurable behavioral terms, to be broken down into small steps that are easy to master, and to provide immediate feedback. The adult learner's role in behavioral education is passive. A student is said to have learned something if a change in behavior is noted. Methods of instruction include competency-based education and computer assisted instruction.

The humanistic theory of learning exhibits a shift to the cognitive and affective needs of the learner. In contrast to behaviorism, humanism rejects the notion that behavior is predetermined by the environment. Thus, students should be free to control their own educational future because behavior is a consequence of human choice. Humanistic theory revolves around the writings of Maslow and Rogers. Maslow's work, based on the hierarchy of needs, is the basis for many humanistic beliefs. The humanistic

motivation to learn is said to be intrinsic and learning is described as a form of self-actualization (Merriam & Caffarella, 1991). According to Rogers (1983) learning from a humanistic viewpoint should see the learner become self initiated, pervasive, and personally involved in the learning process.

When comparing the similarities between behaviorism and humanism, behaviorism is found to be more structured orientation and to establishes specific objectives. In contrast, humanism is more student centered, allowing the student freedom in the direction of learning. Behaviorism is devoted to a prescribed environment to elicit an outcome. Humanistic approaches move toward facilitating self directed learning of adults. Both of these learning theories play a vital part in adult education. Behaviorism's role in adult competency based education and humanism's focus on student centered instruction make them both important to adult learners.

These major theoretical methodologies provide a foundation for many approaches used in adult learning practices. Furthermore, Knowles (1984), a leader in adult education, has been instrumental in the growth and development of a better understanding of how adults are viewed in the educational setting. Recognizing how adults learn permits a better assessment of the characteristics of adult learners and comprehension of the reasons for their

participation in educational activities.

Adult Education

The phenomena of educating adults has stimulated the growth and development of a variety of adult education programs. Higher education has welcomed adult education by developing degrees and programs to meet specific needs of adults. Likewise, private business has recognized the need for employee continuing education and has implemented training centers to address their educational needs.

The works of Knowles provide much insight into the concept of adult education. Knowles is credited with the popularization of the concept of "andragogy." Defined as the art and science of helping people learn, andragogy has redefined the educational system for adults. According to Knowles (1984), classes using the theory of andragogy are student-centered and problem solving-centered. Additionally, the learners' life experiences contribute to the knowledge base of classmates. Knowles explained that adult learners have experiences in life that can enrich the learning process. This theory is in contrast to the more traditional learning theory of pedagogy. Teachers who practice pedagogical theory expect learners to be passive and dependent on instructors (Kelly, 1992). According to Knowles (1984), the andragogical approach to adult learning is based upon five assumptions of characteristics of adult learners:

1. As a person matures his or her self-concept moves from one of a dependent personality toward one of a self-directing human being.
2. An adult accumulates a growing reservoir of experience, a rich resource for learning.
3. The readiness of an adult to learn is closely related to the developmental tasks of his or her social role.
4. Change in time perspective occurs as individuals mature, from one of future application of knowledge to immediacy of application, thus an adult is more problem-centered than subject-centered in learning.
5. Adults are motivated to learn by internal factors rather than external ones.

According to Knowles (1984), adults are self-directed and should realize areas of inadequacies. Adults are also self-initiated to correct any deficiencies through some form of continued learning. Furthermore, adults are motivated by internal factors to learn and do not need external mandate to attend educational activities. Cross (1981) developed another adult education model called characteristics of adults as learners (CAL). This model offered a "tentative framework to accommodate current knowledge of what we know about adults as learners" (p. 234). The model consists of two variables: personal and situational characteristics.

Cross's model differed from Knowles' concept of andragogy due to its "framework for thinking about what and how adults learn" (p. 248).

Who are adult learners? Where do they come from? East Tennessee State University defines adult learners as students who are 23 years of age or greater. Currently adult learners comprise approximately 43% of the total student population at the University (Warner, 1997). National demographics on adult learners between the age of 25-35 demonstrate an increase of 69% between 1972-82. During the same period of time, students over the age of 35 increased 77.5% (Merriam & Caffarella, 1991). Furthermore, of the current 13.9 million students in college, only 2 million are 18-22, full-time, and living on campus. By the year 2000, a 23% decline in traditional students will occur, and over 50% of the students will be adult learners (Merriam & Caffarella).

The first national study that examined the nature of adult education was conducted in 1962 by researchers Johnstone and Rivera (1965). The study attempted to identify activities of formal and informal education and to assess attitudes and opinions held by adults concerning education. The adults in this study were between the ages of 17 and 24. Results of this research formed the foundation for future comparisons. The Commission on Nontraditional Study in 1972 and a triennial survey

performed by the National Center for Education Statistics (NCES) (1969-1984) varied from other studies. Subjects were asked to state their main reason for enrollment in a course. Merriam and Caffarella (1991), provided a summary of the 1984 National Center for Education Statistics survey of selected characteristics for adult education participation. Adults were grouped into areas such as gender with 55% women and 45% men as participants. Age categories indicated the largest group of participants were 25-34 years old with 35-44 year old respondents being the second largest for both genders. Other significant statistics showed that adult participants were employed 81-90% of the time and that 88% of the adults who were continuing their education were white. The top three preferred courses listed were business, engineering, and health care.

Adults participate in continuing education for various reasons. Working under the assumption that participation in learning activities are voluntary, a few models are worth mentioning. Houle (1980) set the foundation for future studies of participation of adults in learning environments. Houle developed a typology of learning orientations of adults and explained why they sought education. The typology consists of goal, activity, and learning orientations. These learning orientations provide rational for why adults persist in continuing education.

One of the more commonly referenced models is Miller's force-field analysis. Miller's model speculated that "adults from lower socioeconomic classes participate for job related reasons, whereas higher socioeconomic participants seek education to satisfy achievement and self-realization" (Merriam & Caffarella, 1991, p. 226).

The amount of adult educational participation in Miller's model is based on four scenarios:

1. Strong personal and social pressures will propel adults toward an educational objective; the movement should result in a high level of participation in a program relevant to that objective.
2. Individuals with significant educational needs will usually have a low level of participation if the program is poorly organized or lacks proper facilitation.
3. If individual educational needs are indecisive but social forces are strong, participation initially will be adequate however diminishing afterwards.
4. When there is dissension between personal and social factors, participation will depend upon the degree of social pressure placed on the individual (Merriam & Caffarella, 1991).

Morstain and Smart (1974) developed six clusters of reasons why adults participate in continuing education.

They used the Education Participation Scale (EPS) developed by Boshier to identify these components. The six clusters consisted of social relationships, external expectations, social welfare, professional advancement, escape/stimulation, and cognitive interest.

Cross (1981) developed the Chain of Response Model (COR) that analyzed the interrelationship of multiple variables and their effect on participation. The variables include self-evaluation, attitudes about education, importance of goals and expectations that participation will meet goals, life transitions, opportunities and barriers, information, and participation. Cross' model indicates that these variables are linked together to elicit a final participant response. If each variable stimulates the adult to proceed to the next level, eventually the learner will participate in a learning activity.

Other studies in adult education have researched reasons that adults do not participate in education. An early study by Dao (1975) found nine clusters of reasons not to participate:

1. Not enough time to participate;
2. Individual and personal problems;
3. Too difficult to succeed in educational activities;
4. Against the social norms to participate in educational activities;

5. Negative feelings toward the institution offering instruction;
6. Negative experiences with educational activities;
7. Results of educational activities not valued;
8. Indifference to educational activities;
9. Unawareness of educational activities available.

Dao indicates lack of time and money as the main deterrents to continued education. In contrast to Dao's findings, Cross (1981) grouped barriers under three separate headings, which consist of situational barriers, institutional barriers, and dispositional barriers. Cross defined these barriers as follows:

Situational barriers are those arising from one's situation in life at a given time. Institutional barriers consist of all those practices and procedures that include or discourage working adults from participating in educational activities - inconvenient schedules or locations, full-time fees for part-time study, inappropriate course of study and so forth. Dispositional barriers are those related to attitudes and self-perceptions about oneself as a learner. Many old citizens, for example, feel they are too old to

learn (p. 98).

In another study, Scanlan and Darkenwald (1984) sought to go beyond the three barriers as identified by Cross and to develop a scale of deterrents to participation (DPS). This enabled Scanlan and Darkenwald to reveal the reasons for nonparticipation. Deterrents to participation scale conceptualized six factors with a list of variables under each section. These factors were disengagement, lack of quality, family constraints, cost, lack of benefit, and work constraints. The most influential deterrent was disengagement, which was followed in order by cost, family, benefit, quality, and work constraints. Scanlan and Darkenwald note that "all deterrents except disengagement and family constraints are associated with programming characteristics" (p. 165).

Darkenwald and Valentine (1985) attempted to identify factors that limit the general public from participation. They stated that prior research performed by Scanlan and Darkenwald (1984) was limited in its focus because it surveyed only select allied health professionals. Darkenwald and Valentine proposed that deterrents to education were multidimensional. According to these authors, an adult's decision not to participate in continuing education was "typically due to the combined or synergistic effects of multiple deterrents, rather than just one or two in isolation" (p. 187).

Valentine and Darkenwald (1990) conducted another study to identify and describe distinctive types of adults who are characteristic of the six deterrent factors listed in their previous studies. This study represented "an attempt to understand, not the basic forces that hinder participation, but the extent to which different types of potential learners experience these forces" (p.30). As a result of this study the authors developed the following typology of adults based on self-reported deterrents to participation:

Type One: People deterred by personal problems. Profile of Type One is women who tend not to work outside the home and who are deterred primarily by family considerations.

Type Two: People deterred by a lack of confidence. A profile of Type Two adults is that of a mature person who lacks the confidence to participate in adult education but who is otherwise in a position to attend - particularly in terms of personal resources and life circumstances.

Type Three: People deterred by educational costs. The profile of Type Three adults is quite clear: young women of moderate education and moderate means who have the confidence to participate in adult education but cannot afford the direct and indirect costs involved.

Type Four: People not interested in organized education. A Type Four adult can be characterized as a well-educated, affluent, working individual (more likely to be male than female) who places relatively low value on participation in organized adult education.

Type Five: People not interested in available courses. The profile for Type Five adults is that of a highly educated, middle-income, working individual (again, more likely to be male than female) who places considerable value on continued education but finds existing programming irrelevant to his or her own needs. (pp. 36-37)

Clearly, implications could be made that health care practitioners participate in continuing education for professional advancement and cognitive interest.

Elimination of barriers to participation could increase the number of continuing education activities that adults annually attend.

Professional Continuing Education

During the 1960s continuing education took on a new meaning. The growth and development of consumer advocate groups and increase in public awareness placed professionals under increased scrutiny. This new level of accountability spawned the growth of professional continuing education.

Houle (1980) discussed several goals of professional continuing education as they relate to the lifelong educational needs of individuals. Houle notes professional continuing education should 1) assist in the mastery of professional theoretical knowledge, 2) stimulate the capacity to problem solve, 3) improve self-enhancement, 4) transmit formal training in professional body of knowledge, 5) provide means of credentialing, 6) assist in legal reinforcement, 7) increase public awareness, and 8) foster a nurturing relationship among similar occupations.

Grotelueschen (1985) implies that participation in professional continuing education is based on three assumptions. First, professionals will actively participate in continuing education if it is purposeful and produces outcomes relevant to their professional practice. Secondly, continuing education should have a fundamental focus that achieves an educational goal. Thirdly, an effort should be made to focus on what exactly constitutes the goals and outcomes of professional continuing education activities. Participation in professional continuing education can be linked to the practice of licensing professionals. Trends in professional practice have seen a dramatic increase in state regulations that mandate participation in continuing education as a prerequisite for periodic relicensure (Little, 1993). The issue of mandatory continuing education (MCE) voids all factors pertaining to who does or does not

participate. The concept of MCE emerged during the 1970s as the result of a call for professional accountability. Growth in specialized professional groups has brought about increasing governmental control for mandated competency-based training (Collins, 1987). In 1978, the states of Kansas and California were the first to implement legislation for MCE in nursing (Thurston, 1992). Generally health care professionals acknowledge the benefits of continuing education as a mechanism for professional renewal. However, many argue that MCE does not guarantee competent health care professionals (Cross, 1981; Fisher & Pankowski, 1992; Hutton, 1987).

Many studies can be found that argue both for and against MCE. Advocates of MCE base their beliefs on the argument that professional competency is a lifelong process that some professionals neglect. Puetz's (1979), Dolphin's (1983), and Schoen's (1980) studies indicated a high rate of participation among registered nurses in voluntary continuing education. However, a significant percentage of nurses were found not to be participating in continuing education. These non-participants were low level staff with no education past their professional training. These were the ones that appeared to need continuing education the most. Arneson (1985) stated that "nurses are not self-motivated and need external encouragement in order to maintain their skills and upgrade their practice" (p. 8).

Perhaps the practitioners in most need of MCE are recent graduates. With the advent of new medical procedures and technologies, higher education struggles to provide adequate classroom and practical experience. Graduates are provided with the foundations in health sciences and need to rely on additional experience gained once they are on the job (Fisher & Pankowski, 1992). These practitioners could greatly benefit from MCE, which would allow them to receive annual training in areas of weakness. Under the voluntary system, financially limited health care facilities usually provide funding only for supervisory and administrative staff. The neglect of the general staff causes a continuous decline of clinical skills and knowledge base. Craft et al. (1992) noted that MCE was influential in allowing nurses to gain professional knowledge and update clinical skills. Hayes, Morin, Sylvia, and Bashford (1995) indicated that MCE would increase participation in continuing education activities by 48%.

Advocates of voluntary continuing education present both practical and philosophical reasons that oppose MCE. From a practical standpoint, voluntary continuing education allows for flexibility in choosing the number and types of continuing education activities (Hutton, 1987). In addition, limited opportunities in rural areas could force practitioners to attend unrelated continuing education due to a mandated requirement. Also, financial concerns are an

issue for practitioners without employer assistance. Finally, mandatory continuing education would force practitioners to allocate personal financial resources in order to keep a professional license.

A common concern of mandatory continuing education is that compulsory education does not insure competence. Several studies (Arneson, 1985; Garganta, 1989; Queeney & English, 1994) indicated the failure of MCE to document an increase in knowledge from participation. The philosophical objection to MCE is that it is in direct disagreement with the principles of adult learning (Brockett, 1992). Proponents of voluntary continuing education contend that adult learners are self-directed and do not need mandates to participate in continued learning.

O'Connor (1982) found that nurses in MCE states placed compliance with authority as the second most common influencing factor of participation. Furthermore, nurses in voluntary continuing education states listed compliance with authority as fourth on the list of factors. These findings indicate that participation in continuing education activities is effected as a result of compliance with authority. Millonig (1985) reported that the non-participatory nurses consist of older, diploma graduates who worked in physician's offices. Additionally, voluntary continuing education participants were primarily younger, recent graduates and were working in the acute care setting.

Waddell (1993) noted that motivation is the primary reason for participation in continuing education activities.

Attitudes Toward Continuing Education

Several studies have examined the attitudes of health care practitioners toward continuing professional education. The primary focus of these studies is to analyze the attitudes of nurses in voluntary versus mandatory continuing education. One of the earliest attitudinal studies was performed by Bush and Lewis (1978). They found that most nurses displayed a negative attitude toward continuing education activities. The researchers attempted to examine various demographic factors that had an effect on nursing attitudes. The study was conducted during a period when mandatory continuing education was not practiced on a wide scale, leaving many unanswered questions about its value and purpose. The study was further limited by a sample size producing questionable reliability.

Loarocca and Polit's (1978) and Schoen's (1982) studies provided contradictory results indicating that nurses are in favor of professional continuing education and display a positive attitude toward educational endeavors. These studies were broader in scope, with samples drawn from a population of nurses from an entire state.

Pituch (1979) compared the attitudes of nurses in a state (Michigan) that had voluntary continuing education as opposed to a state (California) with mandatory continuing

education. The researcher found that subjects in both states expressed a positive attitude toward mandatory continuing education. Nurses, however, in California reported a significantly more favorable attitude than those in Michigan.

Arneson (1985) examined the attitudes of nurses after continuing education was mandated in Iowa in 1979 and again in 1982. The follow-up survey conducted in 1982 indicated a continued increase in the degree of favorable attitudes toward mandatory continuing education. Nurses indicated availability as the most influential factor in affecting their favorable attitudes. Furthermore, cost was listed as the most negative factor influencing attitude.

One of the largest studies analyzing attitudes toward continuing education was conducted by Hungler (1985). The study contrasted the attitude of nurses in six New England states. One state required mandatory continuing education, while five had voluntary continuing education activities. Hungler reported that the attitude of nurses in the mandatory continuing education state was more favorable than nurses in the voluntary states.

Hutton (1987) performed one of the most recent studies validating previous research on attitudes toward continuing education. When asked about their attitude toward MCE, the majority of nurses (73% to 78%) noted favorable or strongly favorable responses. Hutton reported that nurses found

greater quality and quantity of available continuing education programs.

The review of literature suggests that nurses demonstrate a positive attitude toward mandatory continuing education. Several researchers have focused on the personal and professional characteristics of nurses and their relationship to mandatory continuing education. Although positive attitudes have been documented, several studies noted negative effects (Arneson, 1985; Hungler, 1985; Hutton, 1987; Pituch, 1979). Variables such as educational level, cost, and location were noted as contributors to negative attitudes. Nurses with diploma and associate degree level of professional education demonstrated a negative attitude toward continuing education.

The cost of continuing education appeared to influence nurses negatively. Schoen and Morgan (1993) found that employer financial support for continuing education was based on the nurses' professional status as opposed to their needs. Turner (1991) noted that 87% of nurses noted that employers should pay the tuition cost of continuing education. Studies examining location of continuing education have compared state to state differences or various areas of specialty practice in nursing. No studies were found that examined the differences in attitudes when comparing urban to rural health care providers.

Impact of Mandatory Continuing Education

Since the introduction of mandatory continuing education, opponents have questioned its value and impact. Most research conducted on the impact of mandatory continuing education examines the change in clinical practice. Scheller (1993) notes the difficulties in measuring outcomes of continuing education due to a lack of proper evaluation tools. Several studies mentioned previously (Arneson, 1985; Hungler, 1985; Hutton, 1987; Pituch, 1979;) noted a positive impact on the attitudes of nurses as a result of mandatory continuing education.

Hazen (1986) studied the perceptions of nurses toward mandatory continuing education in Northern California. The researcher surveyed nurses in two rural counties to assess the quality of continuing education activities and behavioral changes in practice. Hazen reported an improvement in professional knowledge and skills of nurses who participated in continuing education programs. The nurses stated that mandatory continuing education was effective and should not be changed.

Oliver (1984) determined the impact of mandatory continuing education by analyzing a change in charting documentation as a result of improved clinical skills. The researcher found an improvement in the pre to post charting examinations in the experimental group.

Connor (1989) evaluated the impact of a statewide nursing continuing education program in case management. She reviewed the knowledge and skill level of nurses used a pre/post treatment design. Connor reported a significant difference in nurses' knowledge and performance after attending continuing education programs. The conclusion was drawn that continuing education does impact nurses' professional performance and practice.

Sherwood (1996) surveyed nursing administrators concerning their perceptions of the impact of continuing education participation. The administrators noted a change in personal and professional attributes of nurses who attended continuing education activities. Changes were observed in habits, knowledge, and attitudes.

Numerous studies have reported various effects on participants who attend continuing education programs. The majority of these studies focused on the effects of continuing education on performance. A limited number of studies were found noting the impact on attitudes of participants. No studies were found comparing the impact of mandatory continuing education on rural versus urban health care providers. Several researchers noted this deficiency and recommended future research be conducted in this area.

Issues in Rural and Urban Continuing Education

Many definitions of the terms "rural" and "urban" can be found. The once sharp differences in these terms are

becoming more vague everyday. Stephens (1992) notes that three out of four counties across America are rural. Over the next decade, approximately 23% of new jobs will open in rural communities. Because of these factors, rural educational needs should increase at a comparable rate. However, the Committee on Allied Health Education Accreditation (CAHEA) found that nonmetropolitan education sites for health care providers are comparatively rare (AMA, 1990). This limitation provides inadequate access to individuals in rural communities seeking health related training. According to the Institute of Medicine (IOM), Allied health education, like most health care education, takes place primarily in metropolitan areas. Most often, clinical experience is provided in acute care settings with sufficient patient volumes to support state-of-the-art, high technology services. Graduates are subsequently drawn to employment in similar settings for several reasons. They perceive these settings as offering high-quality care, personal challenges, full use of their education, and the stimulation of contact with peers and supervisors. By contrast, to city-reared workers, rural facilities are an unknown setting, often perceived as isolated, technologically backward, and with

little room for advancement in their field (IOM, 1988, p. 227).

Continuing professional education in rural areas has traditionally experienced several problems. Emerging financial constraints on hospitals are exacerbated in rural areas. State and federal reductions in reimbursement along with the growth in managed care are requiring health care facilities to "tighten their belts." During times of budgetary constraints, continuing education programs are commonly the first area to be cut.

Urban facilities have the financial stability and flexibility to accommodate changes in reimbursement. Current trends in health care have prompted large urban health care facilities to refer patients back to the rural hospitals earlier than in the past. This in turn has brought a population of patients into the rural hospital that is accustomed to and equipped to treat patients who are less critically ill.

Due to changing patient demographics, continuing education plays a vital role in the rural health care community. Hilker et al. (1995) noted that increased demands are being placed on rural health care providers. Long term care patients are requiring an increasingly higher level of care. Hilker et al. report that a significant difference exists in the number of continuing education offerings in rural settings than in urban areas.

The physical location of rural hospitals has a significant impact of continuing education activities. Kwee (1992) reported that location is a major barrier to rural health care professionals. Anderson and Kimber (1991) indicated additional barriers including program cost and lack of relief support for nurses who attend programs. Furthermore, the breadth and scope of practice for health care professionals in rural areas are different. Continuing education programs need to address differences in practice between rural and urban health care professionals, and programs need to be developed to meet their needs. Anderson and Kimber noted that rural practitioners serve more as generalists, while urban health care providers utilize a "high tech" specialty approach.

Because of these expectations, rural health care needs are different from urban areas. Because of cultural values and beliefs, rural citizens tend to delay health care until gravely ill (Long & Weinert, 1989). Rural health care providers need to develop a different philosophical approach to patient care that is based on community values. Long and Weinert attempted to develop a specific theory base for rural nursing education. They indicated that more emphasis should be placed on preventive medicine. Their ethnographic study produced key concepts identified in this theoretical development. They are as follows: lack of anonymity; isolation and distance; work beliefs; and health beliefs. A

lack of anonymity was noted as having relevance to practice in rural areas. Nurses were commonly known to all people in the community. The small town stereotype that everyone knows everyone places increased pressure on the health care provider when dealing with patients and family members. The isolation and distance of rural communities affect the delivery of health care services. Long and Weinert noted that rural individuals seeking health care travel in excess of 50 miles for routine care. The lack of access underscores the importance for rural health care providers to encourage preventive medicine and increase health awareness. Work and health beliefs of rural people differ from those of urban dwellers. Rural communities value work as a first priority, with health care needs being second. Often rural individuals only visit health care facilities for emergencies.

Differences not only existed between rural and urban health care providers, but also variations exist between the methods used for continuing education activities of different rural health care providers. Lockyer, Parboosingh, and McDowell (1987) reported different rural continuing education methodologies for physicians and nurses. Physicians stated self directed learning techniques, such as reading, were the most useful method of continuing education. Nurses indicated that actual inservice education programs were their most preferred

method of accruing continuing education. Providers of continuing education programs must understand the specific needs of various health care professionals so that programs can address their deficiencies.

Numerous approaches have been developed to overcome problems associated with rural health care education. Hedman and Lazure (1990) reported on the successful implementation of a mobile continuing education program that travels to remote rural communities. This statewide program was funded through several federal grants and administered by two university nursing programs. Avery (1988) discussed a collaborative approach to rural continuing education. Several rural hospitals developed a consortium that shared library resources, purchased inservice equipment jointly, and provided inservice education for all hospital personnel. This method was felt to meet the rural practitioners' needs, while also reducing cost and travel expenses. Distance education has been offered as a method to assist rural health care providers in obtaining required continuing education credit. However, many rural health care facilities cannot afford the technology to bring this type of service to practitioners. Patterson (1993) noted that when rural health care facilities used external funding sources, continuing distance education becomes a viable option for rural practitioners.

The review of literature in rural continuing education clearly indicates significant differences between rural and urban continuing education activities. The most frequent reasons cited by rural health care practitioners for not participating in continuing education involved costs associated with travel and registration, accessibility, and difficulty in receiving leave time to attend programs. Furthermore, rural hospitals have fewer health care providers on staff than their urban counterparts.

Demographic variations tend to be significant for age and educational levels. The average rural health care provider is older and has less educational background when compared to urban professionals (OTA, 1990).

Literature addressing specific issues in urban areas are limited. The specialized nature of urban health care has brought about the growth of health care providers that are trained and certified in specific areas. Often these certificates require continuing education activities in a designated area or topic. This can cause difficulties in maintaining certificates in specialty areas due to a lack of course availabilities. Most urban health care facilities provide some financial assistance to attend continuing education programs. However, health care providers with several certificates could find themselves solely responsible for maintaining these credentials.

Although research indicates that overall attitudes toward mandatory continuing education are favorable, several variables consistently induced negative attitudes. For example, variables such as age, education, cost, and location, negatively impact continuing education (Arneson, 1985; Hutton, 1987; Thurston, 1992; Waddell, 1993). Literature suggests that differences exist between rural and urban health care professionals' continuing education activities. However, no research was found comparing the impact of continuing education on the attitudes of rural and urban health care professionals toward continuing education.

Summary

The literature reviewed in this chapter provides a foundation of reference for this study. The first section discussed the development of a theoretical framework for the concepts associated with adult learning. Several key theorists provided insight on methods that allow individuals to have a better understanding of what stimulates adults to continue to learn.

The second section dealt with the phenomena of adult education. Several prior studies were reviewed to analyze why adults participate in lifelong learning activities. The work of Knowles was discussed with his contribution to the philosophical approach to adult education. Numerous models of participation were also discussed to reveal their implications concerning adult education. The section

concluded with a review of the barriers to participation and a discussion of reasons why some adult learners do not participate in adult education.

The third section provided an introduction into professional continuing education. This specialized division of continuing education has experienced dramatic growth since the 1960s. The evolution of this area of continuing education was accelerated by the call for accountability of professionals. Mandatory continuing education is one of the majority issues dealing with continuing professional education. Numerous studies have sought to examine the effects of mandatory continuing education on the practice of health care providers. Mandatory continuing education has become common for most health care professionals. However, there is still much to learn about its effect on the isolated rural areas of this country.

The fourth section of the literature review pertained to health care providers' attitudes toward mandatory continuing education. Much research analyzes the various aspects of attitudes as they relate to continuing education. The overall attitude toward continuing education was found to be positive. However, several variables were identified as producing a negative response toward continuing education. The characteristics of age, educational level, cost, and location evoked a negative attitude in

participants.

The fifth section discussed the impact of continuing education. Most studies found in this domain dealt with measuring outcomes in skills. The general opinion of most researchers was that continuing education impacted health care professionals in a positive manner.

The last section in the literature review analyzed the issues in rural continuing education. Common concerns in rural communities pertaining to continuing education are cost, location, and lack of release time. Furthermore, certain demographic characteristics such as age and educational level were found to be significantly different from urban professionals. These common concerns and demographic factors have related to negative attitudes in previous studies. However, no research exists that examines the impact of mandatory continuing education on the attitudes of rural versus urban health care providers. Thus, the purpose of this study is to provide empirical research that will explore this area of professional continuing education.

TABLE 1
SUMMARY OF LITERATURE REVIEW

Elements of Contributing Literature	Factors	Author(s)
Adult Learning Theories	1) Paulo Freire a) humanistic b) process of reflection c) social setting	Freire (1970)
	2) Robert Gagne' a) types of hierarchical learning	Gagne' (1985)
	3) Jack Mezirow a) adult learning cycles	Mezirow (1990)
	4) Carl Rogers a) experiential learning	Rogers (1983)
Adult Education	1) Andragogy	Knowles (1984)
	2) Pedagogy	Kelly (1992)
	3) Adult learner characteristics (CAL)	Cross (1981)
	4) Adult learner demographics	Merriam & Caffarella (1991)
Reasons for Adult Participation	1) Activities of formal and informal education	Johnstone & Rivera (1965)

Table 1 (continued)

Elements of Contributing Literature	Factors	Author(s)
	2) NCES triennial of adult learners	Merriam & Caffarella (1991)
	3) Social and economic classes	Merriam & Caffarella (1991)
	4) Education participation scale (EPS)	Morstain & Smart (1974)
	5) Interrelationship of multiple variables and their effect on participation	Cross (1981)
Deterrants to Adult Education	1) Time and money	Houle (1980)
	2) Situational, institutional, and dispositional barriers	Cross (1981)
	3) Lack of quality, benefit and work constraints	Scanlan & Darkenwald (1984)
	4) Multidimensional barriers	Darkenwald & Valentine (1985)
	5) Identification of distinctive types of adults for each barrier	Valentine & Darkenwald (1990)

Table 1 (continued)

Elements of Contributing Literature	Factors	Author(s)
	6) Non-participation consistent with older, less educated health care providers	Millonig (1985)
Professional Continuing Education	1) Goals	Houle (1980)
	2) Assumptions for participation	Grotelueschen (1985)
	3) Prerequisite for relicensure	Kelly (1985)
Mandatory Continuing Education	1) Governmental mandates	Collins (1987)
	2) Does not guarantee competency	Cross (1981), Arneson (1985), Hutton (1987), Garganta (1989), Fisher & Pankowski (1992), Queeney & English (1994)
	3) Lack of Motivation to maintain skills	Arneson (1985)
	4) Philosophical objection	Brockett (1992)

Table 1 (continued)

Elements of Contributing Literature	Factors	Author(s)
	5) Advent of new technologies	Fisher & Pankowski (1992)
	6) Update clinical skills	Craft et al. (1992)
	7) Increases participation	Hayes, Morin, Sylvia, & Bashford (1995)
	8) Participation as a result of compliance with authority	O'Connor (1982)
Voluntary Continuing Education	1) High participation	Puetz (1979), Schoen (1980), Dolphin (1983)
	2) Flexibility to choose activities	Hutton (1987)
	2) Negative	Bush & Lewis (1978)

Table 1 (continued)

Elements of Contributing Literature	Factors	Author(s)
Attitudes Toward Continuing Education	1) Positive	Loarocca & Polit (1978), Pituch (1979), Schoen (1982), Arneson (1985), Hungler (1985), Hutton (1987),
	3) Negative attitude associated with age, cost, educational level, and location	Pituch (1979), Arneson (1985), Hungler (1985), Hutton (1987),
Continuing Education Reimbursement	1) Based on professional status	Schoen & Morgan (1993)
	2) Employer Assistance	Turner (1991)
Impact of MCE	1) Difficulties in measuring impact	Scheller (1993)

Table 1 (continued)

Elements of Contributing Literature	Factors	Author(s)
	2) Positive attitude toward continuing education	Pituch (1979), Arneson (1982), Hungler (1985), Hutton (1987),
	3) Increase in knowledge and skills	Hazen (1986), Connor (1989)
	4) Improvement in charting documentation	Oliver (1984)
	5) Changes in personal and professional attributes	Sherwood (1996)
Rural Continuing Education	1) Need for rural education sites	IOM (1988) AMA (1990)
	2) Increase level of skills needed for rural health care providers	Hilker et al. (1995)
	3) Level of continuing education in rural areas	Hilker et al. (1995)
	4) Location of hospitals as a barrier to participation	Kwee (1992)
	5) Cost and lack of relief support	Anderson Kimber (1991)

Table 1 (continued)

Elements of Contributing Literature	Factors	Author(s)
	6) Decrease health care specialization in rural areas	Anderson & Kimber (1991)
	7) Rural cultural differences affecting overall level of health	Long & Weinert (1989)
	8) Comparing rural and urban methods of continuing education	Lockyer, Parboosingh McDowell (1987)
	9) Mobile continuing education programs	Hedman & Lazure (1990)
	10) Collaborative approaches to continuing education among rural hospitals	Avery (1988)
	11) Affordability of distance education in rural areas	Patterson (1993)
	12) Demographics of rural health care providers	OTA (1990)

CHAPTER 3

METHODOLOGY

Research Design

The purpose of this study was to examine the preferences of respiratory care practitioners toward continuing education. The second objective was to analyze differences in the attitude of respiratory care practitioners in rural and urban areas of Tennessee concerning continuing education. Finally, an objective of the study was compare similarities and differences in preferred course content and method of instruction.

The study obtained quantitative data that were used to perform descriptive analysis for a comparison of the demographic characteristics of these two groups. An analysis was performed on the differences in the degree of financial assistance provided from rural and urban health care employers. A self-administered questionnaire was distributed to respiratory care practitioners within the state of Tennessee to answer to questions posed in this research study.

Population

To meet the objectives of the study, subjects were drawn from the accessible population of respiratory care practitioners in Tennessee. A list of all current

respiratory care practitioners was obtained from the State of Tennessee, Department of Health Related Boards. The State of Tennessee requires mandatory continuing education for its 1,966 respiratory care practitioners as of January 1996 (Update State Licensure, 1996).

Sample

The list of practitioners provided from the Department of Health Related Boards was reviewed for the physical location of their residency. Based on the definitions of rural and urban areas, practitioners were grouped by their respective location of practice. A stratified random sample was used to provide an equal chance of selection for all practitioners in the two accessible strata. Using a table of random numbers, a stratified random sample of 150 respiratory care practitioners was selected from each group for a total sample of 300. Respiratory care practitioners with less than one year post-graduate experience were excluded from the study. These new graduates are exempt from continuing education requirements during their first year of practice. Respiratory care practitioners not working in the strata in which they resided were included in the other population for the purpose of this study.

Instrumentation

The questionnaire was designed to collect the necessary data to answer the research questions (Appendix A). The

instrument was designed from two previous studies addressing the impact and attitude toward continuing education (Hazen, 1986; Hutton, 1987). The questionnaire consisted of structured items with no open-ended questions. Specific questions were contrived to elicit responses dealing with the impact and attitudes toward continuing education.

The first section of the questionnaire addressed impact and attitude responses. The section was designed in a Likert scale format to assess the degree of impact on the practitioners attitude. The construction of the Likert scale used a one to six range with one indicating strongly disagree and six indicating strongly agree. Questions 1,3,7,8,10,12,14,15, and 19 were directed to assess the impact of mandatory continuing education. Questions 2,4,5,6,9,11,13,16,17, and 18 analyzed the practitioners' attitudes toward continuing education. Data collected from section one provided responses necessary to answer research question number two. Section two of the questionnaire dealt with the preferences of course content and methodology. Data collection from practitioners' responses provided the necessary information to answer the following research questions: 1) Are there differences in the preferred and actual method of instruction in rural and urban respiratory care practitioners? 2) Are there differences in preference of course content between rural and urban respiratory care practitioners?

The third section of the questionnaire addressed the demographic information required to compare similarities between rural and urban respiratory care practitioners. The demographic profile provided information essential to answer three research questions. They were as follows: 1) What preferences do respiratory care practitioners have regarding continuing education? The questionnaire used questions 54-58, to analyze practitioners preferences. 2) Are there demographic differences among respiratory care practitioners in rural and urban communities? Questions 46-53 and 60-61 addressed demographic characteristics among rural and urban respiratory care practitioners. 3) Is there a difference in employer financial assistance for continuing education courses in rural and urban respiratory care practitioners? Question 59 examined the extent of employer assistance provided to rural and urban respiratory care practitioners.

The East Tennessee State University Respiratory Care Programs Advisory Board reviewed the questionnaire to ensure validation. This 12 member panel examined the questionnaire for content and face validity. Members of this panel are considered to be experts in the field of respiratory care due to their various administrative leadership roles and years of experience. The advisory board consist of an adequate cross section of practitioners from rural and urban areas.

The questionnaire was pilot tested with a convenient sample of 30 respiratory care practitioners from a local hospital. A presentation was also made at the hospital's monthly staff meeting as to discuss the purpose of this study. The questionnaire was handed out and completed at the end of the meeting. Results of the pilot test were monitored and corrections were made to the questionnaire. Revisions to the questionnaire were minimal. Changes were limited to grammatical corrections. Several comments were included on the results of the pilot test. Numerous practitioners noted that the length of the questionnaire should be examined. However, the questionnaire was felt to be of adequate length to provide the necessary data to address the six research questions posed in this study.

Data Collection

Data collection was conducted over a four-week period. Questionnaires were mailed to each of the subjects along with a stamped, self-addressed envelope to facilitate return of the questionnaires. Cover letters (Appendices B & C) were included with each questionnaire stating the importance of the study and promising to safeguard the confidentiality of information provided. Questionnaires were accompanied with a letter of support from the state professional association president. The questionnaires were color coded to differentiate between rural and urban practitioners and numbered to monitor response rates to expedite follow-up

letters. Two weeks following the initial mailing, another questionnaire and reminder letter were sent to the non-respondents.

Data Analysis

Data received from the questionnaires were scrutinized and entered into a data file for statistical analysis. The statistical software employed for this study was the Statistical Package for the Social Science (SPSS/PC+) Studentware for Windows. Descriptive and inferential analysis was performed on the data from the questionnaire.

To test research question number one, descriptive analysis was performed on survey questions 54-58. Respondents scores were grouped into rural and urban mean and standard deviation scores. A t-test was used to determine if there was a significant difference between rural and urban scores. The t-test is a parametric statistical procedure that is used when testing for significance of two mean sample scores (Gall, Borg, & Gall, 1996).

Data used to answer research question number two was gathered from survey questions 1-19. Respondents scores on Likert scale questions were grouped into rural and urban mean and standard deviation values. t-test analysis was performed to compare mean scores for significant differences.

Research questions three and four were answered by survey questions 20-45 using descriptive and inferential analysis. Descriptive analysis provided frequency distributions for each subject area. Upon assigning weighed values to each response, a mean score for each subject area was provided. Inferential statistical procedures analyzed the differences between rural and urban mean scores for the topic six content areas.

Data analysis for research question number five was descriptive in nature. Survey questions 46-53 and 60-61 provided frequency distributions for comparison. The chi-square statistical procedures were performed to identify differences between the two populations. Chi-square is a nonparametric statistical procedure that test if frequency distributions are comparable for different sample populations (Gall, Borg, & Gall, 1996).

Research question number six employed the same statistical procedures as question number one. Uses of descriptive statistics provided the data necessary for chi-square analysis. Survey question number 59 provided the information needed to answer the research question.

CHAPTER 4

DATA ANALYSIS

Introduction

This chapter represents an analysis of the data provided by rural and urban respiratory care practitioners. Surveys were mailed to 300 practitioners across the state of Tennessee. A total of 120 self administered questionnaires were returned after the first and second mailings. Using a stratified random sampling technique, 31% (n=47) rural practitioners returned their surveys, while 49% (n=73) urban practitioners participated in the study. Six (2%) surveys were returned due to insufficient or no forwarding addresses.

Although participants were grouped into rural and urban strata, the questionnaire requested the place of employment for the respondents. Rural practitioners who worked in urban areas were included in the urban strata of participants. Likewise, urban respondents who indicated employment in rural communities were placed in the rural population. It was felt that place of employment was a major influence on the availability and degree of participation in continuing education (CE).

The overall response rate for this study was 40%. The organization of this chapter will follow the order of research questions posed in Chapter one.

Analysis of Data for Research Question #1

The first research question posed in this study was as follows: "What preferences do respiratory care practitioners have regarding continuing education?" To answer this question, responses to questionnaire items 54-58 (Appendix A) in section 3 were reviewed for analysis. A descriptive analysis was performed to include frequency distributions and percentiles.

Questionnaire item number 54 indicated the time during the continuing education renewal period that participants met their continuing education requirement. When reviewing frequencies for both rural and urban participants, 23 (19.2%) of the respiratory care practitioners meet their continuing education requirements early in the renewal period, in the first six months following renewal. The majority of practitioners surveyed (72) indicated that continuing education was obtained throughout the renewal period, during the entire two year period from one renewal date to another. Table 2 represents a summary of questionnaire item number 54.

Questionnaire item number 55 noted the total number of continuing education contact hours respiratory care practitioners received during their last two year renewal period. The minimum amount of continuing education contact time a respiratory care practitioner must receive to

TABLE 2
EDUCATION DURING CE RENEWAL PERIOD

	n	Percent	Cumulative Percent
Early during first 6 months	23	19.2	19.2
Throughout the entire period	72	60.0	79.2
Late during the last 6 months	21	17.5	96.7
Late after expiration	4	3.3	100.0

maintain a state license is 12 hours. Approximately half (49.2%) of the respondents indicated that they obtained the minimum level (12-15) of contact time to keep their license. However, 61 (50.8%) participants noted that they participated in more than 15 hours of continuing education contact time during the last renewal period. A summary of total continuing education hours for respiratory care practitioners is presented in Table 3.

Question number 56 inquired if respiratory care practitioners in Tennessee would continue to participate in professional development if mandatory continuing education was abolished. One hundred five (87.5%) of the respiratory care practitioners surveyed indicated that they, indeed, would continue with some type of professional development

TABLE 3
BIENNIAL HOURS OF CONTINUING EDUCATION

	n	Percent	Cumulative Percent
12	23	19.2	19.2
13-15	36	30.0	49.2
16-20	30	25.5	74.2
21-25	13	10.8	85.0
Over 26	18	15.0	100.0

activity. Only 2 (1.7%) of the respondents stated they would not continue to participate in continuing education. Another 13 (10.8%) of the practitioners were uncertain about their involvement in continuing education activities.

The next questionnaire response continued with the analysis of preferences regarding continuing education. Item 57 on the survey provided a follow-up to question number 56, participants signified the amount of continuing education practitioners should receive each year if continuing education was voluntary. Only 3 (2.5%) respondents stated that respiratory care practitioners should not have to receive continuing education contact time. Nineteen (15.8%) respondents indicated 1 to 5 hours of continuing education was sufficient for each year. Fifty-five (45.8%) noted that they would attend 6 to 10

hours of continuing education each year for professional development. This amount of time represented the approximate number of currently required continuing education contact time. Furthermore, 32 (26.7%) of the respiratory care practitioners responding to the questionnaire stated they would participate in 11 to 15 hours of continuing education activities. Finally, 11 (9.2%) stated they would participate in over 16 hours of continuing education activities each year. A summary of these results is displayed in Table 4.

TABLE 4
HOURS OF VOLUNTARY CONTINUING EDUCATION

	n	Percent	Cumulative Percent
None	3	2.5	2.5
1-5	19	15.8	18.3
6-10	55	45.8	64.2
11-15	32	26.7	90.8
Over 16	11	9.2	100.0

The last questionnaire item analyzed to answer the first research question was number 58. The question asked participants if they perceive a need to retain mandatory continuing education for respiratory care practitioners in Tennessee. Sixty-nine (57.5%) practitioners indicated that

mandatory continuing education should be maintained in the state. Another 33 (27.5%) practitioners noted that mandatory continuing education should be abolished in favor of voluntary continuing education. However, 18 (15%) of the respiratory care practitioners surveyed were uncertain about whether mandatory continuing education should be continued.

An inferential analysis was performed on questionnaire items 54-58 utilizing a two-tailed t-test to determine if differences existed between rural and urban respondents. The level of significance was set at .05 for all statistical testing. Time of education during continuing education renewal period revealed no significant difference between rural and urban respondents ($t = -.092$, $df = 118$, $p = .927$). The total amount of continuing education received during the last renewal period was not found to be significant between the two groups ($t = -1.011$, $df = 118$, $p = .314$). No statistical difference was noted between rural and urban practitioners toward continuing professional development if mandatory continuing education were abolished ($t = .305$, $df=118$, $p = .761$). Furthermore, no difference was found between the two groups concerning the number of continuing education contact hours practitioners would attempt if voluntary ($t = -.073$, $df = 118$, $p = .942$). Finally, no significant difference was noted between the two groups of

TABLE 5
t-TEST ANALYSIS FOR RESEARCH QUESTION # 1

	Population	n	Mean	SD	t Value	<P
<hr/>						
Education during CE renewal period						
	Rural	47	2.04	.69	-.092	.927
	Urban	73	2.05	.72		
<hr/>						
Total amount of CE						
	Rural	47	2.57	1.38	-1.011	.314
	Urban	73	2.82	1.26		
<hr/>						
Voluntary CE						
	Rural	47	1.26	.67	.305	.761
	Urban	73	1.22	.61		
<hr/>						
Hours of voluntary CE						
	Rural	47	3.23	.94	-.073	.942
	Urban	73	3.25	.91		
<hr/>						
Mandatory CE						
	Rural	47	1.49	.66	-1.016	.312
	Urban	73	1.63	.79		
<hr/>						

respondents when asked if mandatory continuing education should be retained ($t = -1.016$, $df = 118$, $p = .312$). Table 5 represents the summary of inferential statistics examining difference in preference of rural and urban respiratory care practitioners toward continuing education.

Based on the analysis in this section, a response to research question #1 can be formulated. The first research question asked, "What preferences do respiratory care practitioners have regarding continuing education?" It appears that respiratory care practitioners in the state of Tennessee have a favorable impression toward continuing education. The preferences toward continuing education seem to be the same for both rural and urban practitioners. The majority of respiratory care practitioners tend to obtain continuing education early during the first 6 months and throughout the entire 2 year renewal period. Only a limited number of practitioners chose to wait until late into the renewal period or just prior to expiration of their license. The number of continuing education hours received by respiratory care practitioners are diverse. Approximately 50% of the practitioners surveyed participate in the minimum amount of continuing education required. The other practitioners prefer to attend up to double the amount of contact hours required to maintain a state license. Respiratory care

practitioners seem to prefer to attend the same amount of continuing education each year, whether mandatory or voluntary. The voluntary continuing education contact hours indicated by practitioners are not significantly different from those that are mandated. Tennessee respiratory care practitioners overwhelmingly support continuing education. The majority of practitioners indicated that they would participate in continuing education regardless of state licensing requirements.

Analysis of Data for Research Question #2

The second research question addressed in this study asked, "Do rural and urban respiratory care practitioners differ in their attitudes toward the impact of mandatory continuing education?" Questionnaire items 1-19 in section one of the instrument were used to answer this question. Each question was placed on a 6 point Likert scale. The possible selections of responses included the following: 1 strongly disagree; 2 moderately disagree; 3 slightly disagree; 4 slightly agree; 5 moderately agree; and 6 strongly agree. Several questions induced negative responses, causing the need to invert the Likert scale (Items 2,3,4,5,6,8,9,& 11). Questions 1,3,7,8,10,12,14,15,& 19 assessed the impact of continuing education on respiratory care practitioners. Likewise, questions 2,4,5,6,9,11,13,16,17,& 18 examined the attitude of

respiratory care practitioners toward continuing education. Descriptive analysis of each question provided means and standard deviations for comparison. Table 6 presents an examination of impact and attitude questions utilizing means and standard deviations.

Inferential analysis utilizing a t-test compared the means for statistical significance. Responses on each of the items (1-19) were found to have no significant difference between the two populations. Both groups of questions were combined to report two values, first for rural and urban impact and secondly for attitude. A two-tailed t-test, demonstrated no significant difference between rural and urban respiratory care practitioners when examining the impact of continuing education on their practice ($t = .181$, $df = 118$, $p = .857$). Furthermore, no significant difference was found in the attitudes of rural and urban respiratory care practitioners toward continuing education ($t = -.088$, $df = 118$, $p = .930$). Table 7 reports the combined t-tests for impact and attitude groups for ease of comprehension.

An analysis of the data collected from the survey participants provided the necessary information to answer research question #2. The second research question asked, "Do rural and urban respiratory care practitioners differ in their attitudes toward the impact of mandatory continuing

TABLE 6
ANALYSIS OF IMPACT AND ATTITUDE RESPONSES

	Population	n	Mean	SD
MCE motivate RCP to continue learning	Rural	47	4.45	1.75
	Urban	73	4.48	1.68
MCE results in less learning than VCE	Rural	47	3.09	1.60
	Urban	73	2.93	1.66
MCE necessary for most people in profession	Rural	47	4.00	1.71
	Urban	73	4.05	1.52
Not enough CE programs available to make MCE practical	Rural	47	3.74	1.74
	Urban	73	3.59	1.69
MCE attempts to insure quality health care	Rural	47	4.43	1.46
	Urban	73	4.78	1.37
MCE upgrades availability & quality of programs	Rural	47	4.17	1.46
	Urban	73	4.01	1.47

TABLE 6 (continued)
ANALYSIS OF IMPACT AND ATTITUDE RESPONSES

	Population	n	Mean	SD
Participation in CE is valuable to professional practice	Rural	47	5.02	1.31
	Urban	73	4.99	1.22
Free programs should be available if CE is mandatory	Rural	47	5.19	1.13
	Urban	73	5.05	1.36
Employers should have more CE programs on site	Rural	47	5.36	.69
	Urban	73	5.37	.92
Opposed to MCE	Rural	47	2.64	1.71
	Urban	73	2.66	1.59
MCE invasion of privacy	Rural	47	2.55	1.77
	Urban	73	2.40	1.42
MCE is degrading & insulting	Rural	47	2.19	1.57
	Urban	73	2.23	1.48

TABLE 6 (continued)
ANALYSIS OF IMPACT AND ATTITUDE RESPONSES

	Population	n	Mean	SD
MCE implies rcp not responsible	Rural	47	2.85	1.73
	Urban	73	2.81	1.72
CE waste of time	Rural	47	1.51	1.06
	Urban	73	1.62	1.08
CE waste of money	Rural	47	1.83	1.40
	Urban	73	1.86	1.21
MCE is good for rcp image	Rural	47	4.38	1.69
	Urban	73	4.52	1.32
MCE should be financed by employer	Rural	47	5.30	1.18
	Urban	73	4.97	1.43
Technology makes CE necessary	Rural	47	5.28	1.10
	Urban	73	5.37	1.14

TABLE 6 (continued)
ANALYSIS OF IMPACT AND ATTITUDE RESPONSES

	Population	n	Mean	SD
RCP should assume cost of CE				
	Rural	47	2.38	1.55
	Urban	73	2.58	1.38

Note:

MCE = Mandatory Continuing Education

VCE = Voluntary Continuing Education

RCP = Respiratory Care Practitioner

CE = Continuing Education

TABLE 7
ANALYSIS OF IMPACT AND ATTITUDES TOWARD CE

	Population	n	Mean	SD	t Value	<P
Combined impact score						
	Rural	47	39.45	5.54	.181	.857
	Urban	73	39.26	5.49		
Combine attitude score						
	Rural	47	30.91	6.24	-.088	.930
	Urban	73	31.01	5.82		

education?" Inferential analysis indicated that there was no difference between the two study groups. Rural and urban respiratory care practitioners' attitudes toward the impact

of mandatory continuing education seem to be similar. Furthermore, these practitioners exhibit comparable attitudes toward continuing education activities.

Analysis of Data for Research Question #3

The third research question analyzed in this study asked, "Are there differences in the preferred and actual methods of continuing education instruction received by rural and urban respiratory care practitioners? Questionnaire items used to answer this question were 34-45 in section II B. Survey respondents were asked to indicate the 3 most preferred and utilized methods of continuing education activities. Rural and urban practitioners had the option of selecting several methods in each category. These choices were as follows: seminar, videotape, video-satellite conference, in-house physician lecture, and sales representative. Descriptive analysis provided frequencies for the number of responses in each method. To compare between rural and urban practitioners, weighted values were assigned to selected choices to facilitate the ranking of responses. Respondents that indicated a method as their first preferred or utilized choice were given a value of 3. Methods indicated as second or third choice received values of 2 and 1. Three methods of continuing education were identified by the respondents as the most preferred and used choices for practitioners. The methods most preferred by

respondents in order of most to least preferred were seminars, physician lectures, and videotapes. The methods most used by respondents in order of most to least used were seminars, videotapes, and physician lectures.

Upon completion of the descriptive analysis, differences were examined between rural and urban populations. Inferential statistical procedures were performed to compare significant differences in rural and urban mean scores. The most preferred method of continuing education was participating in seminars. An analysis revealed no significant difference between the two groups' preferences for this method ($t = .637$, $df = 103$, $p = .525$). The second most preferred method of obtaining continuing education was by in-house physician lectures or rounds. Statistical analysis indicated a significant difference between rural and urban practitioners preference for physicians as a method of continuing education ($t = -2.119$, $df = 91$, $p = .037$). The third preferred method of receiving continuing education was noted as viewing video-tapes. Upon review of the data analysis, no significant difference was found between rural and urban respondent preferences for video-tapes as a method of continuing education ($t = 1.100$, $df = 60$, $p = .276$). Preferences for continuing education methods are presented in Table 8.

TABLE 8
PREFERRED METHODS OF CONTINUING EDUCATION

	Population	n	Mean	t Value	df	<P
Seminars						
	Rural	40	2.38	.637	103	.525
	Urban	65	2.28			
Physician lectures						
	Rural	40	2.00	-2.119	91	.037
	Urban	53	2.32			
Video- tapes						
	Rural	26	2.04	1.100	60	.276
	Urban	36	1.81			

When examining the research data, rural and urban practitioners were asked to indicate the most used method of continuing education. Ranked from most to least used, the following methods were identified: seminar, video-tape, and in-house physician lecture or rounds. The respondents' most used method of obtaining continuing education was attending seminars. When comparing rural and urban participants, no significant difference was noted between the two groups toward the most used most of continuing education ($t = -.659$, $df = 87$, $p = .512$). The

second most used method of continuing education was videotapes. Statistical analysis revealed no difference among rural and urban practitioners using this method for continuing education activities ($t = .430$, $df = 90$, $p = .668$). The third most used continuing education method was in-house physician lectures or rounds. Data analysis indicated a significant difference between rural and urban respondents degree of utilization of physicians as methods to obtain continuing education ($t = 2.288$, $df = 70$, $p = .025$). Table 9 represents methods used by respiratory care practitioners to meet continuing education requirement.

A review of the data analysis provided the necessary information to formulate a response to research question #3. The question asked, "Are there differences in the preferred and actual methods of continuing education instruction received by rural and urban respiratory care practitioners? Inferential analysis indicated that there was a difference between rural and urban practitioners' most preferred and utilized methods of continuing education. Both groups displayed similarities when examining continuing education methods such as seminars and videotapes. However, differences exist between rural and urban respondents in respect to in-house physician lectures. Urban practitioners tend to prefer and use physicians as a method of obtaining continuing education more than rural practitioners.

TABLE 9
METHODS OF CONTINUING EDUCATION USED

	Population	n	Mean	t Value	df	<P
Seminars						
	Rural	38	2.37	-.659	87	.512
	Urban	51	2.47			
Video- tapes						
	Rural	39	2.21	.430	90	.668
	Urban	53	2.13			
Physician lectures						
	Rural	24	1.54	-2.288	70	.025
	Urban	48	1.97			

A statistical difference was found in both preference and use of physicians as a source of continuing education among rural and urban respondents.

Analysis of Data for Research Question #4

The fourth research question in this study asked, "Are there differences in preferences of course content between rural and urban respiratory care practitioners?" Questionnaire items used for data analysis were 20-33 in section II A. Rural and urban practitioners were asked to

indicate the 6 most important topics for continuing education.

From the topics provided, respondents marked their first choice of topics until they had included the six most preferred subject areas. Twenty-one topics were identified by the sample as preferred course content. Descriptive analysis provided frequency distributions for each subject area.

To rank the content areas from most to least preferred, each frequency was given a value of 1 to 6. Respondents who indicated a content area as their first choice were given a weighted value of 6. Likewise, topics that were indicated as a second choice received a value of 5. This process continued until a topic selected as a sixth choice received a value of 1.

Summative scores were tabulated for each topic area; then scores were ranked accordingly from highest to lowest total score. Six topics were identified as the most preferred for the entire sample population. The 6 topics in order of most to least preferred include critical care issues, patient assessment skills, future trends in respiratory care, respiratory diagnostics procedures, sub-acute care issues, and patient education.

After identification of the six most preferred topics was complete, inferential statistical procedures were used

to examine differences between rural and urban respondents. When comparing mean scores for rural and urban respondents, no significant difference was found related to preference for continuing education programs on critical care issues ($t = .718$, $df = 90$, $p = .475$). Rural and urban respiratory care practitioners identified patient assessment as a topic of interest for continuing education activities. Analysis of participants' scores indicated no significant difference between rural and urban perceived preference for this topic as a continuing education course ($t = -.156$, $df = 86$, $p = .877$). The next preferred topic identified by the sample population was future trends in respiratory care. Statistical analysis indicated no significant difference between rural and urban practitioners' perceived need for this topic ($t = 1.557$, $df = 87$, $p = .123$). Respiratory diagnostic procedures was the fourth most preferred topic indicated by the sample population. A review of mean scores for each sample group noted no significant difference between rural and urban preferences. The fifth topic of preference was sub-acute care issues. Analysis of scores noted that no difference was found between rural and urban practitioners concerning the importance of this topic ($t = 1.156$, $df = 64$, $p = .252$). The sixth topic identified by the two sample groups was patient education. When comparing mean scores for rural and urban respondents, no

significant difference was found concerning the preference for this topic area ($t = .168$, $df = 65$, $p = .867$). A summary of preferences for continuing education topics is provided in Table 10.

When reviewing the data analysis provided, a response to research question #4 can be formulated. The fourth research question asked, "Are there differences in preferences of course content between rural and urban respiratory care practitioners?" Based on descriptive and inferential analysis, rural and urban respiratory care practitioners prefer to attend the same type of continuing education courses. Both groups indicated that these topics were important to their practice. Data analysis revealed there is no statistical difference in the preferences in topics for continuing education activities among these two populations.

Analysis of Data for Research Question #5

The fifth research question examined in this study asked, "Are there demographic differences among respiratory care practitioners in rural and urban communities?" Questionnaire items used to answer this question were 46-53 and 60-61. Statistical procedures utilized to answer this question include Mann-Whitney U, chi-square, and descriptive analysis.

TABLE 10

PREFERENCES IN CONTINUING EDUCATION TOPICS

	Population	n	Mean	t Value	df	<P
Critical care						
	Rural	34	4.76	.718	90	.475
	Urban	58	4.53			
Patient assessment						
	Rural	32	4.03	-.156	86	.877
	Urban	56	4.09			
Future Trends in RC						
	Rural	37	3.49	1.557	87	.123
	Urban	52	2.87			
Diagnostics						
	Rural	24	3.79	-.076	67	.939
	Urban	45	3.82			
Sub-Acute Care						
	Rural	42	3.67	1.156	64	.252
	Urban	42	3.19			
Patient Education						
	Rural	29	3.14	.168	65	.867
	Urban	38	3.08			

Gender and Age

The sample population representing rural respiratory care practitioners included 13 (27.7%) males and 34 (72.3%) females. The largest age group consisted of the 26-35 range with 18 (38.3%) indicating this category. Seventeen (36.2%) respondents noted their age in the 36-45 range. Urban practitioners consisted of 23 (31.5%) males and 50 (68.5%) females. The largest urban age group was the 36-45 category with 38 (52.1%) respondents noting this range. Twenty-one (28.8%) urban practitioners indicated the 26-35 range as their age category. A comparison of rural and urban gender differences using a Mann-Whitney U procedure indicated no statistical differences between these two groups ($U = -.447$, $p = .655$). Furthermore, no significant difference was noted among the age of respondents when comparing rural and urban participants ($\text{Chi-square} = 4.24$, $df = 2$, $p = .120$). The complete profile of gender and age demographic characteristics are presented in Table 11.

Work Place

Data were collected on respondents' employment status and place of employment. Thirty-four (72.3%) rural respiratory care practitioners indicated they were employed full-time in the field. Another 9 (19.1%) rural respondents

TABLE 11

COMPARISON OF GENDER AND AGE DEMOGRAPHICS

	Rural (n=47)	Urban (n=73)
Gender		
Male	13 (27.7%)	23 (31.5%)
Female	34 (72.3%)	50 (68.5%)
Mann Whitney U = -.447, p = .655		
	Rural (n=47)	Urban (n=73)
Age		
Under 26	4 (8.5%)	0 (0%)
26-35	18 (38.3%)	21 (28.8%)
36-45	17 (36.2%)	38 (52.1%)
46-65	8 (17.0%)	14 (19.1%)
Chi-square = 4.24, df = 2, p = .120		

noted part-time employment status. Only 4 (8.5%) rural participants stated they currently were unemployed or employed in another profession. As expected, 36 (76.6%) rural practitioners worked in the acute care hospital setting. Six (12.8%) respondents indicated home care as their place of employment. Long-term care facilities accounted for 4 (8.5%) rural employment sites. One (2.1%) rural practitioner noted employment in a physician's office.

Urban employment practices included 58 (79.5%) practitioners working full-time in respiratory care. Eight

(11%) respondents noted part-time employment in the profession. Practitioners not working in the field accounted for 7 (9.6%) rural respondents. The majority of urban respiratory care practitioners (71.2%) were employed by hospitals. Six (8.2%) urban practitioners noted home care as their place of employment. School, college, or university was indicated as the place of employment for 2 (2.7%) urban practitioners. Seven (9.6%) of the urban respondents indicated employment as other. Further review of the data indicated that 3 (4.1%) of these practitioners worked in physician offices, 2 (2.7%) were employed in areas of research, and 2 (2.7%) worked as physician extenders.

Nonparametric statistics were employed to analyze if differences existed in type and place of employment between rural and urban practitioners. Using chi-square statistical procedures to compare observed to expected frequencies of the two sample populations, no significant difference was found between the type of employment for rural and urban respondents (Chi-square = 1.89, df = 2, p = .388). Likewise, chi-square analysis examined differences in place of employment for rural and urban practitioners. Again, no significant difference was found between the two groups (Chi-square = .420, df = 1, p = .517). A complete summary of rural and urban work practices is depicted in Table 12.

TABLE 12

COMPARISON OF WORK PLACE DEMOGRAPHICS

	Rural (n=47)	Urban (n=73)
Employment Status		
Full-time in RC	34 (72.3%)	58 (79.5%)
Part-time in RC	9 (19.1%)	8 (11.0%)
Full-time not RC	4 (8.5%)	7 (9.6%)
Chi-square = 1.89, df = 2, p = .388		
	Rural (n=47)	Urban (n=73)
Place of Employment		
Hospital	36 (76.6%)	52 (71.2%)
Home Care	6 (12.8%)	6 (8.2%)
Other	5 (10.6%)	15 (20.5%)
Chi-square = 4.20, df = 1, p = .517		

Professional Characteristics

Several variables dealing with professional background were compared for similarities and differences. The respiratory care educational level for rural practitioners indicated that 26 (55.3%) respondents had completed a one year certificate program. Twenty (42.6%) rural respondents completed an associate degree in respiratory care. One (2.1%) practitioner attended a baccalaureate respiratory care program.

Rural respondents were asked to indicate their professional credentials related to the practice of respiratory care. Practitioners noted that 30 (63.8%) had successfully completed the entry level examination as a certified respiratory therapy technician (CRTT). Seventeen (36.2%) rural respondents indicated having the advance practitioners credential as a registered respiratory therapist (RRT). Six (12.8%) rural participants noted additional related credentials enhancing their scope of practice. Two (4.2%) of these practitioners have been credentialed as neonatal/pediatric specialists. Two (4.2%) practitioners maintain licensure in nursing, one as a licensed practical nurse (LPN), and the other as a registered nurse (RN). Additionally, one respondent indicated being a physician's assistant (PA), while another received licensure as a registered pulmonary function technologist (RPFT).

The questionnaire assessed respiratory care practitioners highest degree level obtained. Twenty-three (48.9%) rural respondents indicated a certificate in respiratory care as their highest degree. Nineteen (40.4%) denoted an associate degree as their highest degree held. Four (8.5%) rural participants had received a baccalaureate degree in other fields, and one (2.1%) practitioner had received a master's degree.

Of the rural practitioners responding to this study, 15 (31.9%) had 1-5 years of experience in respiratory care. Another 13 (27.7%) practicing rural practitioners indicated 6-10 years of experience. Nine (19.1%) were noted to have 11-15 years of experience in the field of respiratory care. Seven (14.9%) rural respondents stated they had practiced respiratory care for 16-20 years. Only 3 (6.4%) rural respondents had over 20 years of practice in their health care careers.

Professional demographic characteristics of the urban population were examined for a comparison with the rural respondents. When examining urban respiratory care practitioners basic professional level of training, 24 (32.9%) were found to have completed a one year certificate program. Forty-seven (64.4%) urban participants attended an associate degree program in respiratory care. Two (2.7%) practitioners completed a baccalaureate degree program in respiratory care. In the variable addressing credentials of respondents, 26 (35.6%) urban practitioners indicated that they had received the CRTT credential. Furthermore, 47 (64.4%) noted having received the advanced practitioner's credential (RRT).

Additionally, 23 (31.5%) urban respondents indicated other credentials beyond the basic certificate or registry. Eight (10.9%) urban practitioners were credentialed as

neonatal/pediatric specialists. Seven (9.6%) respondents had successfully received a certificate in pulmonary function testing (CPFT). Six (8.2%) urban participants had obtained licensure in nursing, 3 LPN's and 3 RN's. One (1.4%) urban participant had received a certificate in polysomnography and one (1.4%) was a registered pulmonary function technologist.

When asked to indicate their highest degree, 19 (26%) urban practitioners had completed a certificate program in respiratory care. Thirty-four (46.6%) urban respondents stated they held an associate degree as their highest education level. One (1.4%) respondent indicated a baccalaureate degree in respiratory care as the highest educational achievement. Seventeen (23.3%) urban participants had completed baccalaureate degrees in fields other than respiratory care. Two (2.7%) urban practitioners had obtained a master's degree during their educational endeavors.

An analysis of urban work experience revealed 6 (8.2%) of the respondents had 1-5 years of experience. Fifteen (20.5%) urban practitioners surveyed noted 6-10 years of experience in respiratory care. Another 22 (30.1%) urban participants indicated 11-15 years of practice in respiratory care. Nineteen (26%) respondents noted 16-20 years of respiratory care related work experience. Eleven

(15.1%) urban practitioners surveyed stated they had practiced respiratory care for over 20 years.

A comparison was performed examining rural and urban demographic variables to include respiratory care education, professional credentials, highest degree held, and years experience. The chi-square statistical procedure was utilized to compare for significant differences. All alpha levels were pre-set at the .05 level.

When examining rural and urban respiratory care education levels, a significant difference was noted between the two samples (Chi-square = 5.93, $df = 1$, $p = .015$). The professional credentials of rural and urban practitioners were compared to indicate a significant difference in type of license held by the two groups (Chi-square = 9.14, $df = 1$, $p = .002$).

Furthermore, rural and urban frequencies were compared examining their highest degree held. Statistical testing revealed a significant difference in the highest degree held between the two study populations (Chi-square = 8.39, $df = 2$, $p = .015$). The last professional variable analyzed in this group was years of experience in respiratory care. The mean years of experience for rural and urban practitioners were compared to indicate that a significant difference exist between the two sample populations (Chi-square = 14.50, $df = 3$, $p = .002$). Table 13 summarizes

rural and urban professional characteristics.

Distance Traveled and Facility Size

Rural respondents indicated average distances traveled to attend continuing education programs. Two (4.3%) rural respondents traveled 5-15 miles. Four (8.5%) traveled an average distance of 16-25 miles to attend a continuing education activity. Six (12.8%) rural practitioners traveled 26-35 miles per continuing education event. Another nine (19.1%) respondents averaged traveling 36-45 miles to participate in continuing education. The majority of rural respondents (26) (55.3%) had to travel more than 45 miles to attend continuing education courses.

Respiratory care practitioners in rural communities were asked to indicate the total number of beds at their health care facility. Six (12.8%) noted their facility to have fewer than 50 beds for patient care. More than half of the rural respondents (26) (55.3%) indicated their workplace to have 101-200 beds for patient care. Three separate practitioners noted their facilities as one of the three next categories, one (2.1%) being 201-300 beds, one (2.1%) being 301-400 beds, and the last practitioner indicating 401-500 beds. Six (12.8%) rural respiratory care practitioners noted that they work outside the hospital setting. These practitioners typically work in home care, as noted in place of employment demographic characteristics.

TABLE 13

COMPARISON OF PROFESSIONAL CHARACTERISTICS

	Rural (n=47)	Urban (n=73)
Respiratory Care Education		
Certificate	26 (55.3%)	24 (32.9%)
Associate and Baccalaureate	21 (44.7%)	49 (67.1%)
Chi-square = 5.93, df = 1, p = .015		
	Rural (n=47)	Urban (n=73)
Professional Credential		
CRTT	30 (63.8%)	26 (35.6%)
RRT	17 (36.2%)	47 (64.4%)
Other	6 (12.8%)	23 (31.5%)
Chi-square = 9.14, df = 1, p = .002		
	Rural (n=47)	Urban (n=73)
Highest degree held		
Certificate in RC	23 (48.9%)	19 (26.0%)
Associate degree	19 (40.4%)	34 (46.6%)
Post Associate degree	5 (10.6%)	20 (27.4%)
Chi-square = 8.39, df = 2, p = .015		

TABLE 13 (continued)
COMPARISON OF PROFESSIONAL CHARACTERISTICS

	Rural (n=47)	Urban (n=73)
Respiratory Care Experience		
1-5 years	15 (31.9%)	6 (8.2%)
6-10 years	13 (27.7%)	15 (20.5%)
11-15 years	9 (19.1%)	22 (30.1%)
16-20 years	7 (14.9%)	19 (26.0%)
Over 20 years	3 (6.4%)	11 (15.1%)
Chi-square = 14.50, df = 3, p = .002		

An analysis of urban respiratory care practitioners average distance traveled to attend continuing education activities includes 6 (8.2%) respondents noting less than 5 miles. Ten (13.7%) practitioners traveled 5-15 miles to participate in continuing education programs. Nine (12.3%) urban respondents noted an average distance of 16-25 miles. Thirteen (17.8%) stated they attend continuing education courses that were 26-35 miles from their residences. Another 12 (16.4%) urban participants indicated an average traveling distance of 36-45 miles. Twenty-three (31.5%) noted that they travel an average of over 45 miles to participate in continuing education programs.

When asked to indicate the size of their health care facility, 4 (5.5%) urban respondents noted 51-100 total number of beds. Likewise, 7 (9.6%) practitioners stated their facility had 101-200 beds. Twelve (16.4%) listed their facility as having 201-300 beds. Another 7 (9.6%) noted 301-400 beds as the size of their place of employment. Eight (11%) of the urban participants noted that their facility had 401-500 beds. Twenty-one (28.8%) reported their facility had over 500 beds for patient care services. Fourteen (19.2%) stated they work outside the traditional patient care setting. Like rural participants, these practitioners usually work in the home care setting.

Statistical procedures were performed using chi-square analysis to compare variables of distance traveled to continuing education programs and the size of participants work facility. An examination of rural and urban average distance traveled revealed significant differences in the two group observed distances (Chi-square = 9.66, df = 3, $p = .022$). As would be expected, a significant difference was found between rural and urban participants in regards to the mean number of beds in these two populations (Chi-square = 51.85, df = 2, $p = .000$). Summaries of data for distance traveled and total number of beds are displayed in Table 14.

An analysis of demographic variables made it possible to answer research question #5. The fifth research question asked, "Are there demographic differences among respiratory care practitioners in rural and urban communities?" Various statistical procedures were used to provide data necessary to address this research question. Statistical differences were found in several professional demographic characteristics. The level of respiratory care education was found to be significantly different between rural and urban practitioners. The majority of rural practitioners tended to be graduates of one year certificate programs. However, most urban respondents indicated their professional training to be at the associate degree level.

The respondents' level of professional education corresponded with their professional credential. When examining rural and urban professional credentials, a significant difference was found between the two sample populations. Most rural practitioners practice with a certificate license (CRTT). Urban respondents hold an advance practitioner's license (RRT). Another demographic characteristic of practitioners was the level of additional credentials these participants hold. Over 30% of urban respondents noted that they held various specialty licenses to enhance their scope of practice and level of expertise.

TABLE 14
COMPARISON OF TRAVEL AND FACILITY CHARACTERISTICS

	Rural (n=47)	Urban (n=73)
<hr/>		
Distance traveled to CE program		
Less than 15 miles	2 (4.3%)	16 (21.9%)
16-25 miles	4 (8.5%)	9 (12.3%)
26-35 miles	6 (12.8%)	13 (17.8%)
35-45 miles	9 (19.1%)	12 (16.4%)
Over 45 miles	26 (55.3%)	23 (31.5%)
<hr/>		
Chi-square = 9.66, df = 3, p = .022		
<hr/>		
	Rural (n=47)	Urban (n=73)
Total number of beds		
Less than 100 beds	32 (68.1%)	4 (5.5%)
101-200 beds	6 (12.8%)	7 (9.6%)
201-400 beds	2 (4.2%)	19 (26.0%)
Over 400 beds	1 (2.1%)	29 (39.8%)
Outside hospital setting	6 (12.8%)	14 (19.2%)
<hr/>		
Chi-square = 51.85, df = 2, p = .000		
<hr/>		

The highest level of education for rural and urban participants was found to be significantly different. A large number of urban respondents were found to have baccalaureate degrees in other fields. A comparison of respondents years of clinical experience in respiratory care

indicated a significant difference between the two sample populations. Urban respiratory care practitioners indicated that they had more years experience than their rural counterparts.

When reviewing the distance respiratory care practitioners travel to attend continuing education programs, a significant difference was found between the two groups. Rural respondents typically had to travel farther when compared to urban participants. As would be expected, a significant difference was revealed in the size of facility between rural and urban practitioners. Rural participants indicated that their facilities were smaller than those in which urban respondents practice.

Overall, a distinct difference existed between rural and urban respiratory care practitioners. In response to research question #5, significant differences exist in demographic characteristics between rural and urban practitioners. Rural participants tend to hold an entry level license, have less higher education and years of experience, travel longer distances to continuing education programs, and work in smaller health care facilities. The only similarities found in these two groups were the distribution of gender and age of respondents.

Analysis of Data for Research Question #6

The sixth research question examined in this study was "Is there a difference between rural and urban employer financial assistance with continuing education courses?" The questionnaire item used to answer this question was 59. The statistical procedures utilized to answer this question included a chi-square and descriptive analysis.

When performing a data analysis of rural participants, 11 (23.4%) indicated that their employer does not reimburse practitioners for attending continuing education programs. Twenty-six (55.3%) rural respondents noted that they were partially reimbursed for the expense of attending continuing education activities. Ten (21.3%) rural practitioners stated they received total reimbursement for expenses associated with continuing education programs.

Urban practitioners were asked to indicate their level of employer financial assistance related to participation in continuing education. Twenty-seven (32.9%) noted their employer did not provide any assistance with the cost acquired. Thirty (41.1%) urban respondents indicated partial reimbursement while sixteen (21.9%) stated their employer reimbursed all costs associated with participation in continuing education.

A comparison was performed on the level of employer reimbursement available in rural and urban health care

communities. Statistical procedures provided frequencies and percentiles for examination. The chi-square test of significance was used to compared rural and urban observed frequencies for statistical differences. Examination of the observed levels of reimbursement between the two population groups revealed no significant differences in the amount received (Chi-square = 2.91, df = 2, p = .233). An analysis of the data collected from the sample population provided the essential information to answer research question #6. The last research question read as follows: "Is there a difference between rural and urban employer financial assistance with continuing education courses?" Inferential analysis indicated that no differences between the two study populations. Rural and urban respiratory care practitioners received the same amount of financial assistance to attend continuing education activities from their employer. The majority of employers provided at least partial, if not total, reimbursement for their employees. Location of practitioner practice did not dictate the amount of reimbursement for continuing education.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to examine the preferences, impact, and attitude of respiratory care practitioners toward continuing education. A review of demographic characteristics was conducted to develop a professional profile of practitioners in Tennessee. Furthermore, an assessment of continuing education practices provided information concerning types of courses, preferences, and methods used to meet continuing education requirements. The study yielded data necessary to answer the research questions posed in Chapter 1.

Data collection was made possible through the use of a questionnaire. A stratified random sample was drawn from the 1,966 respiratory care practitioners in Tennessee. Based on the practitioner's residence, 150 practitioners were selected from rural and urban communities. A total of 300 self-administered questionnaires were mailed to practitioners to comprise the survey sample. Data collection was conducted over a 4-week period with a second mailing occurring after the first 2 weeks. A total of 120 surveys were returned for a response rate of 40%.

The questionnaire was designed to solicit responses necessary to answer the research questions posed in this study. Section 1 of the instrument used a 6 point Likert scale to assess respiratory care practitioners' perceptions on impact and attitude toward continuing education. Section 2 provided respiratory care practitioners the opportunity to indicate the types of courses needed for practice in their professional area. Likewise, this section permitted respondents to indicate methods of continuing education most preferred and used. The last section of the survey provided the necessary data to analyze variations in demographical characteristics of respiratory care practitioners in Tennessee.

Data analysis of survey results was performed with the Statistical Package for the Social Sciences (SPSS). Statistical procedures employed in this study included descriptive and inferential analysis. For significance testing, Alpha levels were pre-set at .05 for all data analysis.

Conclusions

The findings in this study demonstrated that rural and urban respiratory care practitioners in Tennessee have similar preferences toward continuing education. Survey respondents indicated that they attend continuing education programs as an ongoing process. Participates do not tend to

wait until the last minute to meet their continuing education requirements. Respondents exhibited their acceptance of mandatory continuing education; the majority of them attended more than the minimum requirement to maintain their license. Furthermore, an overwhelming majority of respondents indicated they would attend continuing education programs regardless of state mandates for participation. The respondents indicated that they would maintain the same levels of participation in continuing education programs if it were voluntary. However, practitioners did feel mandatory continuing education was beneficial and should be retained in Tennessee.

The preferences surrounding continuing education are beneficial to the state licensing board and local continuing education coordinators across the state. Often changes are made in licensing requirements without knowing their effects on actual respiratory care practitioners' practice. This study provides empirical data to suggest the continuation of mandatory continuing education in Tennessee.

States requiring continuing education for respiratory care practitioners to maintain their license vary the amount of mandatory contact time. Currently states that have licensure indicate a range of continuing education contact time from 0 to 40 hours biennially. Licensing boards

benefit from information concerning the practitioners' preferences concerning the amount of contact time needed to maintain professional standards. Currently, the Tennessee Respiratory Care Licensure Board requires 12 contact hours biennially. This level of contact time seems to be acceptable to most respiratory care practitioners. As indicated, most practitioners participate in continuing education activities beyond the minimum expectations.

Continuing education coordinators can have a better understanding of the patterns of attendance from this study's findings. Likewise, program planners need to be aware of times during the renewal period that are more conducive to continuing education activities.

This study indicated no differences in the impact of mandatory continuing education between the attitude of rural and urban practitioners. Both groups reported that mandatory continuing education had impacted the attitude of respiratory care practitioners in a positive manner. These findings are consistent with previous studies conducted in nursing (Arneson, 1985; Hungler, 1985; Hutton, 1987; Loarocca & Polit, 1978; Schoen, 1982;). Respondents note that mandatory continuing education motivates practitioners to continue learning. Survey participants agreed that mandatory continuing education was necessary for most people in the profession. Furthermore, they disagreed that

mandatory continuing education was degrading, insulting, or an invasion of privacy. Rural and urban respiratory care practitioners noted that mandatory continuing education had a positive impact on their professional image.

Several studies (Arneson, 1985; Hungler, 1985; Hutton, 1987; Pituch, 1979) identified variables such as educational level, location, and cost as factors that induce negative attitudes in nurses toward continuing education. These studies stated that nurses with associate degree training were more prone to have negative attitudes toward continuing education as opposed to baccalaureate prepared nurses. Allied health providers, such as respiratory care practitioners, have lower professional training than nursing. However, the findings of this study do not support previous research that suggested educational levels served as a predictor of attitudes toward continuing education. Respiratory care practitioners in Tennessee with one and two years of professional training were found to display the same positive attitudes toward continuing education that their baccalaureate prepared nursing counterparts revealed. An analysis of location of practice was a major premise in this study. When comparing rural and urban populations, both groups indicated a positive attitude toward continuing education. Location of the practitioners' workplace did not induce negative attitudes as indicated in previous studies.

Survey respondents indicated that they felt employers should assume the responsibility of continuing education costs. These findings were similar to those of Turner (1991), who found that health care providers urged employers to incur the cost of continuing education. Likewise, participants noted mandatory continuing education programs should be free if practitioners were responsible for the cost.

Although these findings indicate cost as an influential factor, cost failed to induce negative attitudes. The variables educational level, location, and cost did not promote negative attitudes in respiratory care practitioners in this study. These findings are in direct conflict with previous studies addressing nursing attitudes toward continuing education.

The study produced findings that revealed differences between rural and urban practitioners most preferred and used methods of continuing education. Lockyer, Parboosingh, and McDowell (1987) reported differences in methods preferred by different health care providers. This study found that differences can exist in practitioners within the same profession but different geographical locations.

Involvement of physicians as a method most preferred and utilized for continuing education was viewed to be differently between groups. Urban respondents preferred to utilize physicians as a source of continuing education more

than rural practitioners. This can be attributed to the availability of physicians in the two locations. Urban locations tend to have more physicians who specialize and can offer more training in current state-of-art technology. Rural practitioners typically work with physicians licensed in family practice. They are less likely to possess specialized training in areas of interest for respiratory care practitioners.

Both groups indicated seminars as their most preferred and used method of continuing education. However, more alternative methods need to be developed for practitioners to meet their continuing education requirements. These alternative methods tend to be of greater importance in rural areas due to a lack of specialized physicians and distance to continuing education activities.

Anderson and Kimber (1991) indicated that rural and urban health care practices were different and stated continuing education programs should address those differences. When analyzing course topics that were important to rural and urban practitioners, both groups noted similarities in areas of interest. Survey respondents were given a choice of 13 topic areas with the option to write in areas not indicated. Comparison of rural and urban respondents found both groups preferences for course content were the same. These findings reveal that coordinators of

continuing education programs can identify topics of interest meeting the needs of practitioners from both locations. Establishing lists of preferred topic areas that are universal to practitioners regardless of location can be beneficial to continuing education planners. These topic areas can serve as guidelines for planners in search of courses to stimulate interest in programs.

Topics indicated as the most preferred in order of preference were as follows: critical care issues, patient assessment, future trends in respiratory care, diagnostics, sub-acute care, and patient education. The need for continuing education in these content areas transcends geographical boundaries. Although rural practitioners were noted as "generalist" they indicated the need to keep pace with critical care issues. Rural health care facilities have begun to see more critically ill patients in their setting. Keeping abreast of issues in critical care are paramount. Regardless of location, topics such as patient assessment and education, diagnostics, and future trends are important in the everyday practice of respiratory care. Furthermore, the growth in sub-acute care makes it a preferred topic in both locations.

A comparison of demographic characteristic found similarities and differences. The typical rural and urban respiratory care practitioner tended to be a female between

the ages of 26-45. The typical respondent works full-time as a respiratory care practitioner in an acute care hospital.

However, differences between these two groups of practitioners exist in their professional characteristics. Most rural practitioners were found to be graduates of one year certificate programs in respiratory care. The majority of urban respondents had received an associate degree in respiratory care. Likewise, most rural practitioners were credentialed as certified respiratory care technicians. Urban practitioners identified themselves as registered respiratory therapist. Additionally, urban practitioners held several types of specialty credentials. These findings provide contrasting results when compared to other studies (OTA, 1990). Both studies report that rural health care providers were less educated, however OTA found rural providers to be older. This study noted rural and urban respiratory care practitioners to have no differences in age. Furthermore, rural health care workers were found to have less experience in respiratory care. This increases the need for continuing education programs that target rural communities.

As expected, differences were found in the distance traveled to continuing education programs between the two study groups. Rural practitioners were required to travel

greater distances to attend continuing education activities. This indicates the need for program development in these communities. Continuing education programs typically are developed in urban areas to increase attendance. The lack of programs in rural areas cause undue hardships for practitioners choosing to work in these locations. Various factors such as cost, low attendance, and lack of facilities serve as barriers for rural program development. Innovative delivery methods need to be devised to meet this need.

Reimbursement has been found to be a major factor in the amount of participation in continuing education. Several researchers (Arneson, 1985; Hungler, 1985; Hutton, 1987; Pituch, 1979) noted that cost can invoke negative attitudes toward continuing education. Most health care professionals who are required to obtain continuing education noted their employer should provide financial assistance. Schoen and Morgan (1993) noted that professional status dictates the level of reimbursement received by employees. This study indicated that rural and urban practitioners received the same amount of financial assistance from their employers. The majority of respondents noted that they received partial reimbursement to cover the cost of continuing education. This demonstrates that employers feel health care providers should assume a portion of the cost to maintain their professional license.

Recommendations

The results and conclusions of this study provide the bases for the recommendations listed below.

1. Other allied health professionals with similar educational training should be examined to validate this study.
2. Comparative studies need to be conducted with states that have voluntary continuing education for respiratory care practitioners. This should include an examination of the attitudes toward continuing education and difference in actual contact time.
3. Studies need to be directed at the development of nontraditional or alternative methods for continuing education.
4. An increased effort needs to exist between allied health practitioners in the development of interdisciplinary continuing education courses.
5. The state professional association for respiratory care needs to take an active role to increase the awareness of alternative methods for continuing education in rural communities.
6. State licensing board should consider increasing the amount of mandatory continuing education contact time.
7. Efforts should be made to encourage urban hospitals with continuing education departments to develop

programs within rural health care facilities to increase program availability.

REFERENCES

- American Medical Association, Committee on Allied Health Education and Accreditation. (1990). Allied health education directory: 1990. Chicago: American Medical Association.
- Anderson, J., & Kimber, K. (1991). Meeting the continuing education needs of nurses in rural settings. The Journal of Continuing Education in Nursing, 22(1), 29-34.
- Apps, J. W. (1988). Higher education in a learning society. San Francisco: Jossey-Bass.
- Arneson, S. W. (1985). Iowa nurses' attitudes toward mandatory continuing education. The Journal of Continuing Education in Nursing, 16(1), 7-12.
- Avery, S. (1988). A comparative approach in inservice education for isolated rural hospitals. Journal of Emergency Nursing, 14(5), 293-296.
- Brockett, R. G. (1992). Should continuing education be mandatory? New directions for adult and continuing education. (pp. 87-93). San Francisco: Jossey-Bass.
- Bush, T. A., & Lewis, C. W. (1978). Continuing education for nurses: Perceptions and performances. The Journal of Continuing Education in Nursing, 9(2), 10-13.
- Collins, M. (1987). Competence in adult education. New York: University Press.

- Connors, H. R. (1989). Impact evaluation of a statewide continuing education program. The Journal of Continuing Education in Nursing, 20(2), 64-69.
- Craft, M. J., Heick, M., Richards, B., Murray, J., Lathrop, N., & Reed, S. (1992). Program characteristics influencing nurse selection of ce offerings. The Journal of Continuing Education in Nursing, 23(6), 245-252.
- Cross, K. P. (1981). Adults as learners. San Francisco: Jossey-Bass.
- Dao, M. N. (1975). The orientations toward nonparticipation in adult education. Unpublished doctoral dissertation, University of Chicago.
- Darkenwald, G. G., & Valentine, T. (1985). Factor structure of deterrents to public participation in adult education. Adult Education Quarterly, 35(4), 177-193.
- Dolphin, N. W. (1983). Why do nurses come to continuing education programs? Journal of Continuing Education in Nursing, 14(4), 8-16.
- Fisher, F., & Pankowski, M. L. (1992). Mandatory continuing education for clinical laboratory personnel. The Journal of Continuing Education in the Health Professions, 12(4), 225-234.
- Freire, P. (1970). Pedagogy of the oppressed. New York: Herder and Herder.

- Gagne, R. M. (1985). The conditions of learning and theory of instruction (4th ed.). New York: Holt, Rinehart and Winston.
- Gall, M. D., Borg, W. R., & Gall, J. P. (1996). Educational research (6th ed.). White Plains, NY: Longman.
- Garganta, K. J. (1989). The question of mandatory continuing education for professionals. Harvard University. (ERIC Document Reproduction Service No. ED 356 422)
- Grippin, P., & Peters, S. (1984). Learning theory and learning outcomes. New York: University Press of American.
- Grotelueschen, A. D. (1985). Assessing professionals reasons for participating in continuing education. In R.M. Cevero & C.L. Scanlan (Eds.), Problems and prospects in continuing education. (pp. 33-45). San Francisco: Jossey-Bass Publishers.
- Hayes, E. R., Morin, K. H., Sylvia, B., & Bashford, M. R. (1995). Meeting the challenge of mandatory continuing education. Journal of Nursing Staff Development, 11(2), 89-94.
- Hazen, J. P. (1986). The impact of mandatory continuing education on nursing practice as perceived by registered nurses in Northern California (Doctoral dissertation, University of San Francisco, 1986).

- Hedman, L., & Lazure, L. A. (1990). Extending continuing education to rural area nurses. Journal of Continuing Education in Nursing, 21(4), 165-168.
- Hilker, M. A., Coward, R. T., Hogan, T. L., Francis-Felsen, L. C., Duncan, R. P., & Horne, C. H. (1995). Comparison of the continuing education needs of rural and urban long-term care nurses. Gerontology and Geriatrics Education, 16(2) 21-31.
- Houle, C. O. (1980). Continuing learning in the professions. San Francisco: Jossey-Bass.
- Hungler, B. P. (1985). Attitudes and opinions of registered nurses from the six New England states regarding continuing education (Doctoral dissertation, Boston College, 1985). Dissertation Abstracts International, 46(09)A, 2523.
- Hutton, C. A. (1987). Impact of mandatory continuing education: A review of research on nurses' attitude and perceived outcomes. The Journal of Continuing Education in Nursing, 18(6), 209-213.
- Institute of Medicine. (1988). Committee to Study the Role of Allied Health Personnel. In: Allied health services: Avoiding crises. Washington, DC: National Academy of Sciences.

- Johnstone, J. W. C., & Rivera, R. J. (1965). Volunteers for learning: A study of the educational pursuits of adults. Hawthorne, NY: Aldine.
- Kelly, D.K. (1992). Report on successful practices: Adult learner in vocational programs. Fullerton, CA. (ERIC Document Reproduction Service No. ED 353 018)
- Knowles, M. S., & Associates. (1984). Andragogy in action: Applying modern principles of Adult learning. San Francisco: Jossey-Bass.
- Kwee, J. S. (1992). Report on the Oregon rural health care provider continuing education survey. Paper presented at the meeting of the Gerontological Society of America, Washington, DC.
- Little, C. D. (1993). Mandatory continuing education: A survey of the literature and a comment on the implications for physical therapy. The Journal of Continuing Education in the Health Professions, 13, 159-167.
- Loarocca, S., & Polit, D. (1978). A study of nurses' attitudes toward mandatory continuing education for relicensure. The Journal of Continuing Education in Nursing, 9(1), 25-35.

- Lockyer, J. M., Parboosingh, I. J., & McDowell A. C. (1987).
Teleconferencing and the continuing education
preferences of physicians and nurses in rural areas.
Mobius, 7, 53-58.
- Long, K., & Weinert, C. (1989). Rural nursing: Developing
the theory base. Scholarly Inquiry for Nursing
Practice: An International Journal, 3(2), 129-132.
- Merriam, S. B., & Caffarella, R. S. (1991). Learning in
adulthood. San Francisco: Jossey-Bass.
- Merriam, S. B., & Cunningham, P. M. (1989). Handbook of
adult and continuing education. San Francisco: Jossey-
Bass.
- Mezirow, J. (1990). Fostering critical reflection in
adulthood: A guide to transformative and emancipatory
learning. San Francisco: Jossey-Bass.
- Millonig, V. L. (1985). Nurses' educational backgrounds,
position levels and participation in continuing
education. The Journal of Continuing Education in
Nursing, 16(2), 70-72.
- Morstain, B. R., & Smart, J. C. (1974). Reasons for
participation in adult education courses: A
multivariate analysis of group differences. Adult
Education, 24(2), 83-98.

- O'Connor, A. B. (1982). Reasons nurses participate in self-study continuing education programs. Nursing Research, 31(6), 371-374.
- Office of Technological Assessment. (1990). Health care in rural America (OTA-H-434). Washington, DC:US. Government Printing Office.
- Oliver, S. K. (1984). The effects of continuing education on the clinical behavior of nurses. The Journal of Continuing Education in Nursing, 15(4), 130-134.
- Patterson, B. A. (1993). A study of learning resources utilized by rural and urban registered nurses (Doctoral dissertation, University of Oklahoma, 1993). Dissertation Abstracts International, 54(11), 3964.
- Pituch, M. J. (1979). Perceptions of nurses toward mandatory continuing education (Doctoral dissertation, The University of Michigan, 1979). Dissertation Abstracts International, 40(10)B, 4741.
- Puetz, B. E. (1979). Continuing education in nursing in Indiana: An evaluate description. Dissertation Abstracts International, 40(04), 1816-A.
- Queeney, D. S., & English, J. K. (1994). Mandatory continuing education: A status report. Columbus, OH: Center on Education and Training for Employment. (ERIC Document Reproduction Service No. ED 372 306)

- Rogers, C. R. (1983). Freedom to learn for the 80's.
Columbus, OH: C.E. Merrill.
- Scanlan, C., & Darkenwald, G. G. (1984). Identifying
deterrents to participation in continuing education.
Adult Education Quarterly, 34(3), 155-166.
- Scheller, M. K. (1993). A qualitative analysis of factors in
work environment that influence nurses' use of
knowledge gained from CE programs. The Journal of
Continuing Education in Nursing, 24(3), 114-122.
- Schoen, D. C. (1980). The relationship between formal
continuing education of registered nurses, their career
commitment, and the professionalization of nursing.
Dissertation Abstracts International, 41(06), 2463-A.
- Schoen, D. C. (1982). Continuing education and the
professional orientation of nurses. Research in
Nursing and Health, 5, 183-189.
- Schoen, D. C., & Morgan, A. P. (1993). Who pays for
continuing education in nursing? The Journal of
Continuing Education in Nursing, 24(1), 13-16.
- Sherwood, G. (1996). Nurse administrators' perceptions of
the impact of continuing nursing education in
underserved areas. The Journal of Continuing Education
in Nursing, 27(3), 124-130.

- Stephens, E. R. (1992). The condition of the diverse regions of rural america. Journal of Research in Rural Education, 8(1), 1-13.
- Tennessee Board of Medical Examiners, (1995). Respiratory care practitioner act. Chapter 0880-7. Nashville, TN: Division of Health Related Boards.
- Thurston, H. I. (1992). Mandatory continuing education: What the research tells us. The Journal of Continuing Education in Nursing, 23(1), 6-14.
- Turner, P. (1991). Benefits and costs of continuing nursing education: An analytical survey. The Journal of Continuing Education in Nursing, 22(3), 104-108.
- Update State Licensure. (1996, January). AARC Times, 20(1), 25-29.
- Valentine, T., & Darkenwald, G. G. (1990). Deterrents to participation in adult education: Profiles of potential learners. Adult Education Quarterly, 41(1), 29-42.
- Waddell, D. L. (1993). Why do nurses participate in continuing education? A meta-analysis. The Journal of Continuing Education in Nursing, 24(2), 52-56.
- Warner, C. (1997). Adult student data. Johnson City, TN: East Tennessee State University, Center for Adult Programs and Services

APPENDICES

APPENDIX A
Self Administered Questionnaire

**RESPIRATORY CARE PRACTITIONERS
ATTITUDES TOWARD CONTINUING EDUCATION**

This study is an investigation into the attitudes of respiratory care practitioners toward continuing education. This survey should take approximately 15 minutes to complete. Please answer all the questions as honestly as possible. There are no right or wrong answers.

Section I. ATTITUDES TOWARD CONTINUING EDUCATION

This part of the questionnaire relates to your attitude toward mandatory continuing education. Please indicate to what extent you agree or disagree with each of the following statements by circling the response that is most indicative of your attitude.

KEY:	SD means strongly disagree
	MD means moderately disagree
	SLD means slightly disagree
	SA means slightly agree
	MA means moderately agree
	STA means strongly agree

		<u>ANSWERS</u>					
		<u>SD</u>	<u>MD</u>	<u>SLD</u>	<u>SA</u>	<u>MA</u>	<u>STA</u>
1.	Mandatory continuing education is needed by most RCP's to motivate them to continue to learn.....	1	2	3	4	5	6
2.	I am opposed to mandating participation in continuing education activities.....	1	2	3	4	5	6
3.	Mandatory continuing education results in less learning than voluntary participation.....	1	2	3	4	5	6
4.	Mandatory continuing education is an invasion of personal rights and privacy.....	1	2	3	4	5	6
5.	Mandatory continuing education is insulting and degrading to RCP's and the profession.....	1	2	3	4	5	6
6.	Mandatory continuing education implies that RCP's are not responsible for meeting their own learning needs.....	1	2	3	4	5	6
7.	Mandatory continuing education is necessary for most people in our profession.....	1	2	3	4	5	6
8.	There are not enough quality continuing education opportunities to make mandatory continuing education practical or feasible.....	1	2	3	4	5	6
9.	Continuing education is a waste of time, whether mandatory or not.....	1	2	3	4	5	6
10.	Mandatory continuing education is one attempt to insure quality health care.....	1	2	3	4	5	6
11.	Continuing education is a waste of money.....	1	2	3	4	5	6

		<u>ANSWERS</u>					
		<u>SD</u>	<u>MD</u>	<u>SLD</u>	<u>SA</u>	<u>MA</u>	<u>STA</u>
12.	Mandatory continuing education upgrades the availability and/or the quality of continuing education offerings.....	1	2	3	4	5	6
13.	Mandatory continuing education is good for RCP's professional image.....	1	2	3	4	5	6
14.	Participation in continuing education is valuable for a RCP's professional practice.....	1	2	3	4	5	6
15.	If continuing education is mandatory, free programs should be available to all RCP's.....	1	2	3	4	5	6
16.	Mandatory continuing education should be financed by employing agencies.....	1	2	3	4	5	6
17.	Rapid technological changes make it necessary for RCP's to upgrade their skills through continuing education.....	1	2	3	4	5	6
18.	It should be the RCP's obligation to assume the cost of their continuing education.....	1	2	3	4	5	6
19.	Places of employment should have more continuing education programs available on site.....	1	2	3	4	5	6

Section II. PREFERENCES FOR COURSE CONTENT AND METHODOLOGY

Please indicate your preference of the 6 most important topics.

A. TOPICS

Key: 1. FIRST CHOICE	3. THIRD CHOICE	5. FIFTH CHOICE
2. SECOND CHOICE	4. FOURTH CHOICE	6. SIXTH CHOICE

- ____20. Respiratory care theory
- ____21. Sub-Acute care issues
- ____22. Critical care issues
- ____23. Patient education
- ____24. Patient assessment skills
- ____25. Geriatric topics
- ____26. Health care legislation
- ____27. Computer uses in respiratory care
- ____28. Cross training skills
- ____29. Respiratory diagnostic procedures
- ____30. Pulmonary rehabilitation

- ____ 31. Noninvasive cardiac test
- ____ 32. Future trends in respiratory care
- ____ 33. If you have preferences not listed above, please add them.
- _____

B. METHODS OF INSTRUCTION

Please indicate the method of instruction you MOST PREFER in continuing education activities.

Key: 1. FIRST CHOICE	3. THIRD CHOICE	5. FIFTH CHOICE
2. SECOND CHOICE	4. FOURTH CHOICE	6. SIXTH CHOICE

- ____ 34. SEMINAR
- ____ 35. VIDEOTAPE
- ____ 36. VIDEO-SATELLITE CONFERENCE
- ____ 37. IN HOUSE PHYSICIAN LECTURE/ROUNDS
- ____ 38. SALES REPRESENTATIVE
- ____ 39. OTHER FORMAT _____

Please indicate the method of instruction you MOST UTILIZE in continuing education activities.

Key: 1. FIRST CHOICE	3. THIRD CHOICE	5. FIFTH CHOICE
2. SECOND CHOICE	4. FOURTH CHOICE	6. SIXTH CHOICE

- ____ 40. SEMINAR
- ____ 41. VIDEOTAPE
- ____ 42. VIDEO-SATELLITE CONFERENCE
- ____ 43. IN HOUSE PHYSICIAN LECTURE/ROUNDS
- ____ 44. SALES REPRESENTATIVE
- ____ 45. OTHER FORMAT _____

Section III. DEMOGRAPHICS OF RESPIRATORY CARE PRACTITIONERS

46. Sex: _____ 1. Male _____ 2. Female

47. Age group:

- ____ 1. 25 or less
- ____ 2. 26-35
- ____ 3. 36-45
- ____ 4. 46-55
- ____ 5. 56-65
- ____ 6. over 65

48. Current Employment Status:

- ☐ 1. employed full-time in respiratory care
☐ 2. employed part-time in respiratory care
☐ 3. employed full-time, not in respiratory care
☐ 4. employed part-time, not in respiratory care
☐ 5. not employed

49. Place of Employment:

- ☐ 1. Hospital
☐ 2. Home Care
☐ 3. Long Term Care Facility
☐ 4. School/College/University
☐ 5. Other _____
☐ 6. Not applicable

50. Basic respiratory care preparation:

- ☐ 1. Certificate
☐ 2. Associate Degree
☐ 3. Baccalaureate Degree
☐ 4. Other (please specify)

51. Credentials held: (list all that apply)

- ☐ 1. CRTT
☐ 2. RRT
☐ 3. CPFT
☐ 4. RPFT
☐ 5. NEONATAL/PEDIATRICS
☐ 6. Other _____

52. Highest degree held:

- ☐ 1. High School graduate
☐ 2. Certificate in respiratory care
☐ 3. Associate degree
☐ 4. Baccalaureate degree in respiratory care
☐ 5. Baccalaureate degree in another field
☐ 6. Masters degree
☐ 7. Doctorate degree

53. Number of years you have worked in respiratory care since completion of your basic respiratory care training:

- ☐ 1. less than 1 year
☐ 2. 1-5 years
☐ 3. 6-10 years
☐ 4. 11-15 years
☐ 5. 16-20 years
☐ 6. more than 20 years

54. During your last continuing education renewal period, please indicate the response that best describes the time period during which you met your continuing education requirement.

- ☐ 1. Early in the renewal period, in the first six months following renewal.
☐ 2. Throughout the renewal period, during the entire two year period from one renewal date to another.
☐ 3. Late in the renewal period, in the last six months preceding renewal.
☐ 4. Late in the renewal period, including the time after license expiration.

55. Indicate the total number of continuing education contact hours you received during your last two year renewal period:

- ☐ 1. 12
☐ 2. 13-15
☐ 3. 16-20
☐ 4. 21-25
☐ 5. 26 or more

56. If mandatory continuing education were abolished, would you continue to participate in professional development each year?
- _____ 1. Yes _____ 2. No _____ 3. Uncertain
57. If continuing education was voluntary, indicate the amount of contact time you feel respiratory care practitioners should receive each year.
- _____ 1. none
_____ 2. 1-5
_____ 3. 6-10
_____ 4. 11-15
_____ 5. 16 or more
58. Do you believe mandatory continuing education should be retained for respiratory care practitioners in Tennessee?
- _____ 1. Yes _____ 2. No _____ 3. Uncertain
59. To what extent does your employer reimburse your cost to attend continuing education activities?
- _____ 1. Not at all
_____ 2. Partially pays expenses
_____ 3. Totally pays expenses
60. What is the average distance you travel to attend a continuing education activity?
- _____ 1. less than 5 miles
_____ 2. 5-15 miles
_____ 3. 16-25 miles
_____ 4. 26-35 miles
_____ 5. 36-45 miles
_____ 6. more than 45 miles
61. Indicate the total number of beds in your health care facility.
- _____ 1. Less than 50
_____ 2. 51-100
_____ 3. 101-200
_____ 4. 201-300
_____ 5. 301-400
_____ 6. 401-500
_____ 7. Greater than 500
_____ 8. Not applicable, work outside hospital setting
62. In the space provided below, please indicate the county in which your employer is located.
- _____

APPENDIX B

Cover Letter For Questionnaire

November 10, 1997

Dear Colleague:

I am a doctoral candidate in the College of Education at East Tennessee State University examining the impact of continuing education on the attitudes of respiratory care practitioners in Tennessee. This study will allow respiratory care practitioners across the state to have an opportunity to provide input on decisions concerning state licensure in the years to come. The results of this study will be shared with the Board of Health Related Professions for consideration in shaping future policies on continuing education.

As a representative of our profession, you have been randomly selected to participate in this study. It is not only important to my study, but to us as a profession that you please take 15 minutes of your time and complete the enclosed questionnaire by November 25, 1997.

A self-addressed envelope has been provided to facilitate the return of the questionnaire. Please return the questionnaire only, do not include the cover letters. Your responses will be held in strict confidants. If you would like a summary of the results of this study, please indicate at the end of the questionnaire.

Thank you in advance for your participation.

Sincerely,

Don Samples, M.S., R.R.T.
622 West Mountain View Rd.
Johnson City, TN 37604

APPENDIX C
State Professional Association
Letter Of Support

Tennessee Society for Respiratory Care

Dear Respiratory Care Practitioner,

You are receiving a questionnaire in the mail from Don Samples, MS, RRT. Don is a respiratory care educator and a doctoral candidate at East Tennessee State University surveying the perception of benefits resulting from participation in mandatory continuing education by Tennessee respiratory care practitioners.

The results of this study will lend insight into the effectiveness of Tennessee's mandatory continuing education policy for respiratory care practitioners.

You have been chosen randomly to participate in this study. Therefore, it is important that you please take 10-15 minutes of your time to complete the questionnaire and return it to him in the post-paid envelope he is providing. This will help ensure that the results truly represent the perceptions of Tennessee respiratory care practitioners.

Thank you in advance for your time and cooperation.

Sincerely,

Patrick Flaherty, MS, RRT
1997 TSRC President

VITA

NAME: DONALD ALAN SAMPLES

ADDRESS: 622 West Mountain View Rd.
Johnson City, Tennessee 37604

TELEPHONE: (423) 610-0597 (home)
(423) 547-4917 (work)

E-Mail: samples@mounet.com

EDUCATIONAL BACKGROUND:

East Tennessee State University Johnson City, Tennessee	Bachelor of Business Administration Degree, May 1980 Concentration in Management
East Tennessee State University Johnson City, Tennessee	Certificate in Respiratory Therapy, August 1983
University of Tennessee Knoxville, Tennessee	Master of Science Degree, August 1993 Major: Technological and Adult Education
East Tennessee State University Johnson City, Tennessee	Doctorate in Education in Educational Leadership and Policy Analysis, May 1998

PROFESSIONAL CREDENTIALS:

Certified Respiratory Therapy Technician (CRTT), 1983
Registered Respiratory Therapist (RRT), 1985
Re-Certified Respiratory Therapy Technician (CRTT), 1992

PROFESSIONAL MEMBERSHIPS:

American Association of Respiratory Care
Tennessee Society of Respiratory Care
Northeast Tennessee Chapter of Respiratory Care
Gamma Beta Phi National Honor Society
Lambda Beta National Honor Society for Respiratory Care

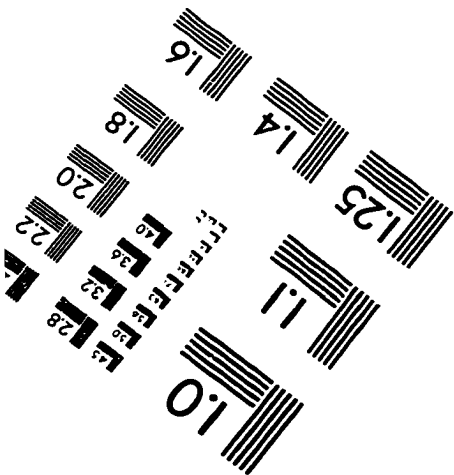
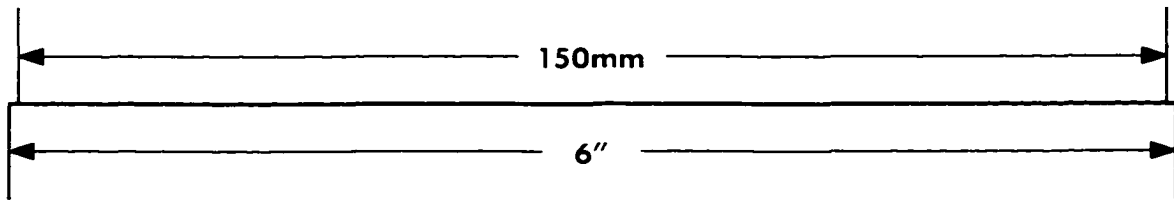
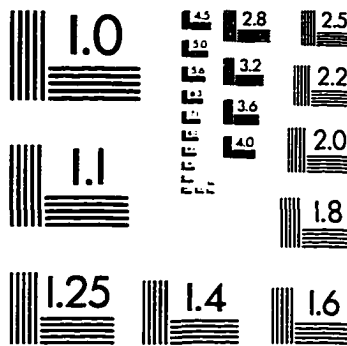
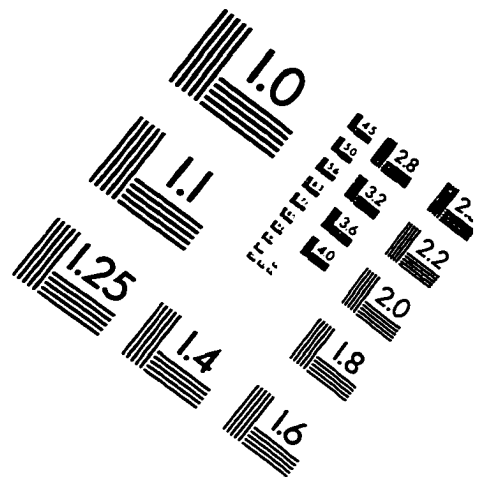
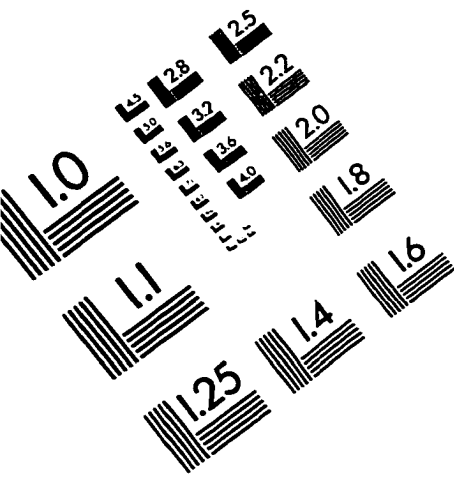
WORK EXPERIENCE:

East Tennessee State University
Department of Health Related Professions
1000 West E Street
Elizabethton, Tennessee 37643

May 1990 - Present

DUTIES: Assistant Professor/Director of Clinical Education -
Respiratory Care Programs. Responsible for coordination of
one and two year respiratory care students in clinical
internship and didactic laboratory courses. Assist Program
Director in the program administration and accreditation
process to include the recruitment, selection, and retention
of students.

IMAGE EVALUATION TEST TARGET (QA-3)



APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989

© 1993, Applied Image, Inc., All Rights Reserved

